10¢ A COPY

The OIL WEEKLY

Exclusively Devoted To The Production and Transportation of Oil and Gas

Engineering News Statistics

October 11, 1929 Volume 55. No. 4

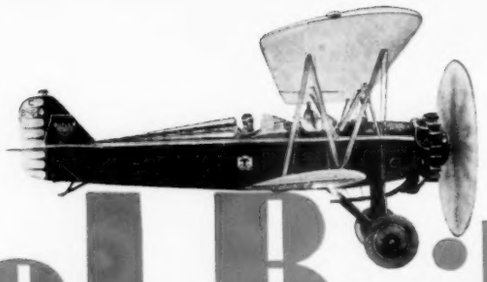
The Confidence

and friendship of "The Men in the Fields" in Hughes Rock Bits, Tool Joints and other products have meant much in the building of this institution of service from a small beginning.

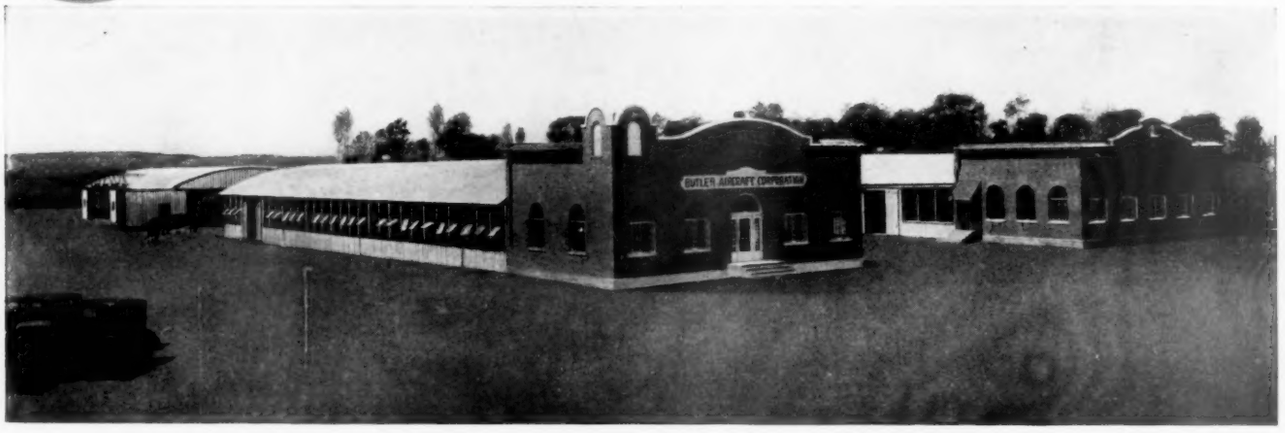
Performance must measure up to Expectation to HOLD Confidence

Hughes Tools Sold By Supply Stores Everywhere

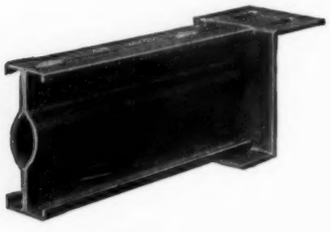
The Hughes Tool Company Plant at Houston, occupying more than 8 acres of floor space—employing more than 3,300 men—manufacturing Hughes products for use in the Rotary Oil Fields of the world.



Steel Buildings



Shelter This Aircraft Factory



FOR months booking of orders for the Butler Blackhawk airplane by the Butler Aircraft Corporation exceeded production. New and larger quarters became more painfully necessary day by day.

July 1st, 1929, contracts were let for the building of twin factory units to cover a floor space area of 35,000 sq. ft. at the Kansas City Airport. Specifications called for Butler Ready-Made Steel Buildings insulated with gypsum board to shelter manufacturing operations.

SIX WEEKS LATER the Butler Blackhawk was in increased production in its new home. Office and engineering personnel were forced to wait longer for their masonry quarters which afford no greater comfort.

In addition to speedy erection, Butler Ready-Made Steel Buildings offer completeness, economy in acquiring and in maintenance, fire-safeness and structural qualities which make for permanence yet which permit enlarging.

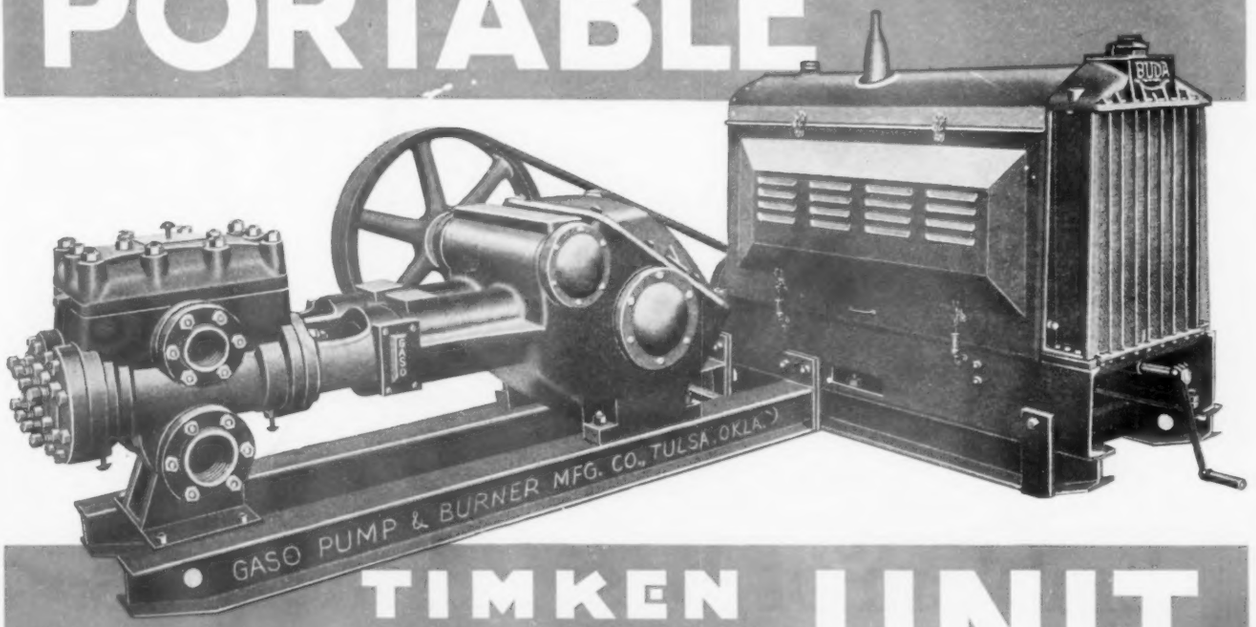
A new booklet picturing various installations of Butler Buildings awaits your request. The Butler engineering staff will submit all the detailed information needed to make a selection to fulfill your particular requirements.

BUTLER MANUFACTURING CO.
1246 Eastern Ave. Kansas City, Mo.
946 Sixth Ave., S. E. Minneapolis, Minn.

BUTLER
READY-MADE
STEEL BUILDINGS
STEEL BUTLER PRODUCTS

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 10 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1837.

PORTABLE



TIMKEN BEARING PUMPING UNIT

GASO Fig. 1508 Pump—mounted on H-Beam skids with V-Rope Drive from Buda 90 H.P. gas or gasoline Engine—offers dependable, economical and convenient operation in temporary or permanent service.

This compact GASO Portable Pumping Unit is easily transported and quickly put into service, thus being an ideal unit for temtorary installations.

Timken main and pinion bearings—continuous tooth Herringbone gears—H-column connecting rod with babbitt-lined, removable bronze shell at crank end—and an oil-tight crank case, with every moving part running in an oil bath—are features which insure efficiency and long life, and make this an economical unit for permanent service.

Interchangeable liner fluid end gives capacities varying from 63 bbls. per hour at 800 lbs. pressure to 250 bbls. per hour at 250 lbs. pressure.

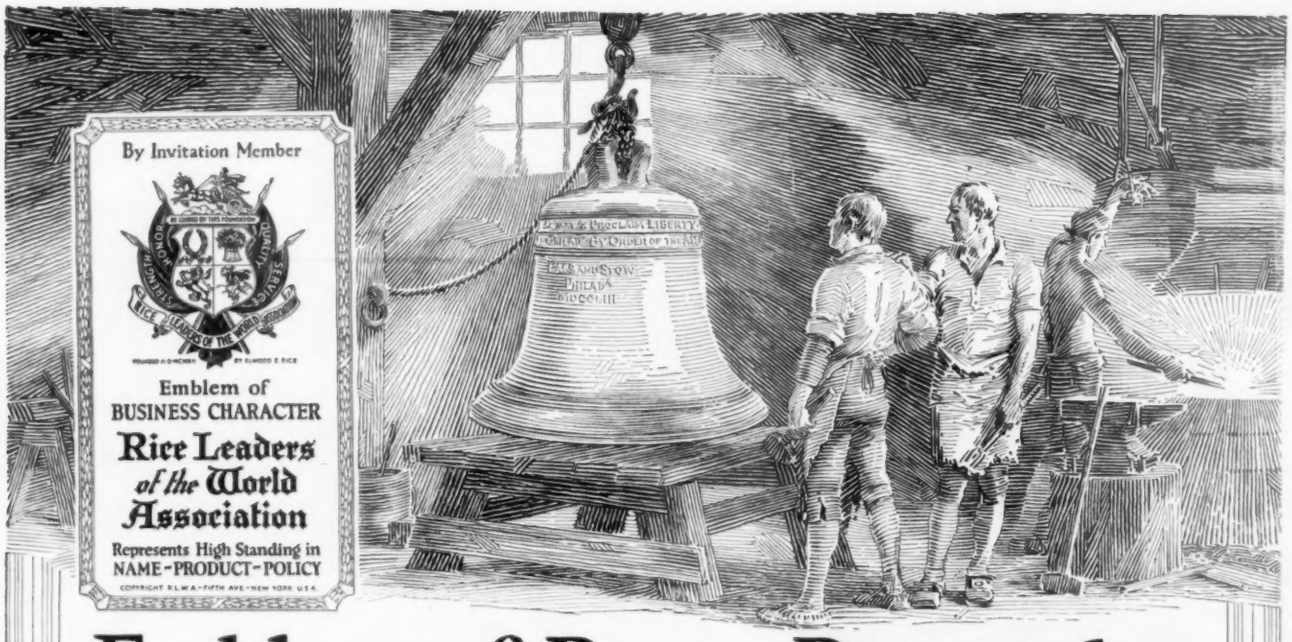
GASO PUMP & BURNER MFG. COMPANY

210 Petroleum Bldg.
Fort Worth, Texas

TULSA, OKLAHOMA

535 Fifth Avenue
New York, N. Y.

GASO PUMPS
for every oil industry need



Emblem of Basic Principles

For generations the historic old Liberty Bell has symbolized the basic principles of our land, proclaiming to all the inspiring message of Freedom, Equality, Justice and Truth. Upon these fundamentals the great American Republic has grown, to a position of leadership among the nations of the world.

For sixteen years the Emblem of the Rice Leaders of the World Association has symbolized and proclaimed the basic business principles of

Honor—Quality—Strength—Service

The fact that the DARLING VALVE & MFG. COMPANY is a member of this Association is evidence that we qualify on all four points. It testifies that we have builded and conducted a growing, successful, world-wide business upon the broad foundations of permanence.

The basic principles portrayed in the Assocition Emblem are the essence of what you may expect when you entrust us with your Gate Valve and Fire Hydrant business. These principles warrant the quality of "DARLING" Products, assuring you of honest value and satisfaction for the money you spend.

Darval Semi-Steel Gate Valve. Made in all sizes for general field use, pipe lines, drilling through, well control and well flow lines.

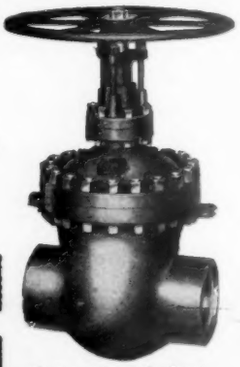
DARLING VALVE & MFG. COMPANY
Williamsport, Pa.

New York Chicago Oklahoma City Houston

Mid-Continent Distributors:
Frick-Reid Supply Corp. Atlas Supply Co.
International Supply Co. Petroleum Supply Co.

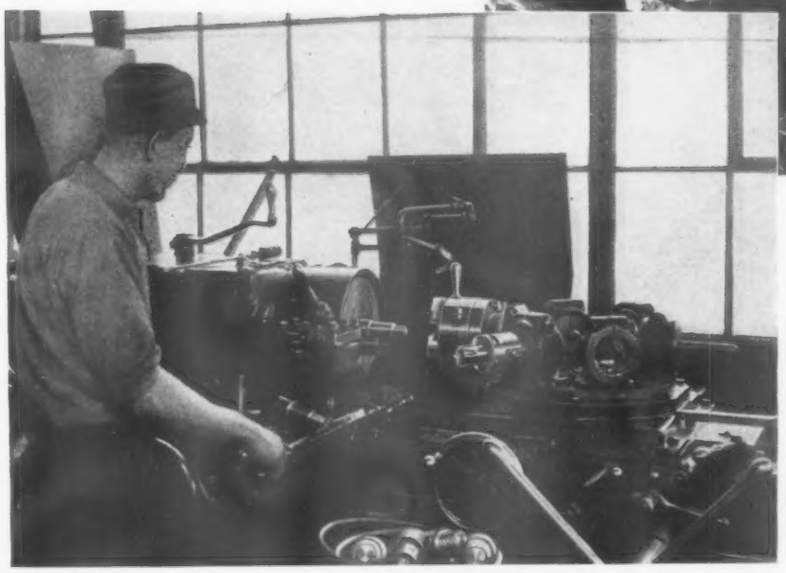
California Distributor:
Petroleum Equipment Company, Los Angeles

DARLING GATE VALVES



Darling Forged Steel Gate Valve for drilling well control, flow lines and other hazardous conditions.

The Landmatic Head and Victor Tap make an ideal combination for threading and tapping many of the parts necessary for the production of oil.



The successful operation of all oil well equipment depends upon the accuracy of certain threaded parts. Most of the successful manufacturers use Landmatic Heads and Victor Taps.

The high standards of Landis quality insure the ability of Landis equipment to produce accurate threads under all conditions—and in strict accordance with the A. P. I. specifications.

Landis users are especially pleased with their equipment because the high production and low maintenance cost make possible the manufacture of threaded parts at a greater profit.

WRITE US FOR DETAILS.

LANDIS TRADE MARK

LANDIS MACHINE CO., INC., WAYNESBORO, PENNA.

Detroit Office—5928 Second Blvd.
Cleveland Office—504-505 Marshall Bldg.

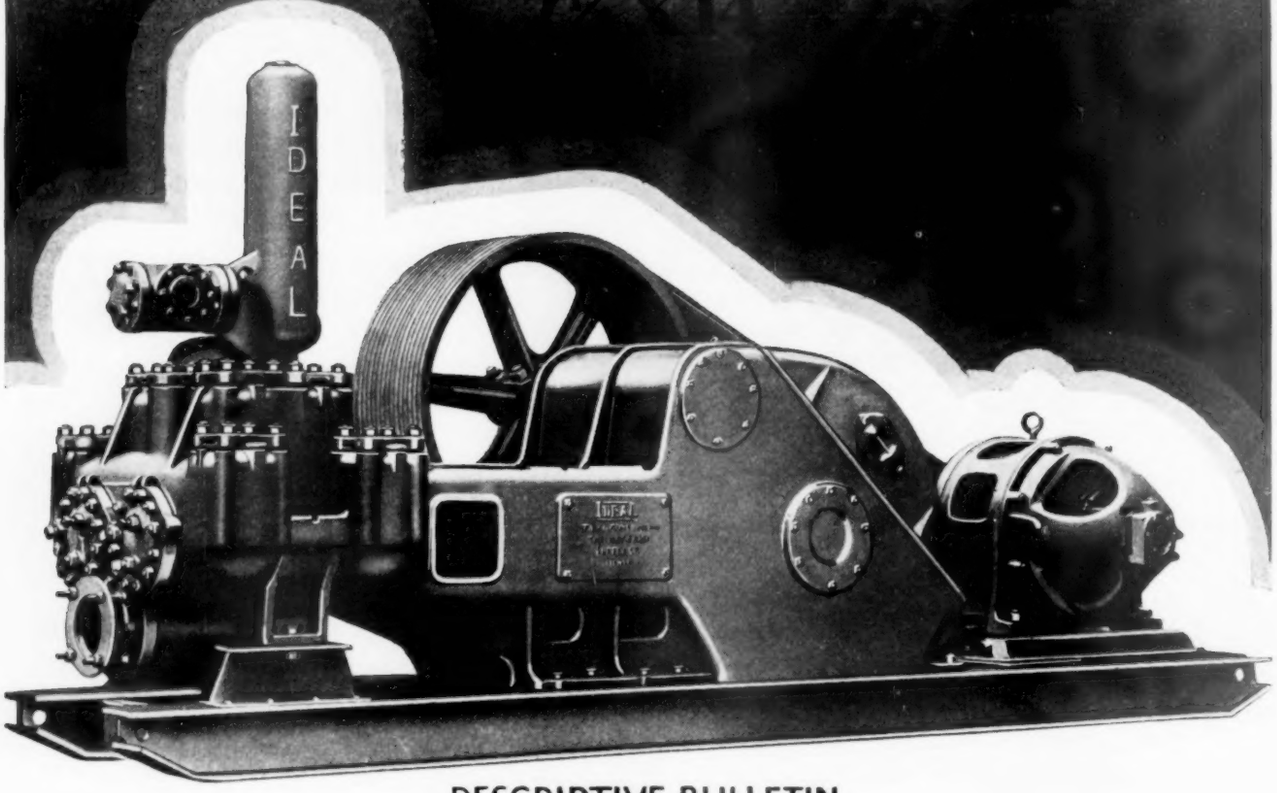
Represented in the Domestic Oil Fields by: Colcord-Wright Machinery and Supply Co., St. Louis, Mo.; D. S. Mair Machinery Co., Houston, Texas; Woodward Wight & Co., New Orleans, La.; Herberts Machinery & Supply Co., Los Angeles; Herberts Moore Machinery Co., San Francisco, Calif.; Hendrie & Bolthoff Mfg. & Supply Co., Denver, Colo.

IDEAL

TYPE "B"

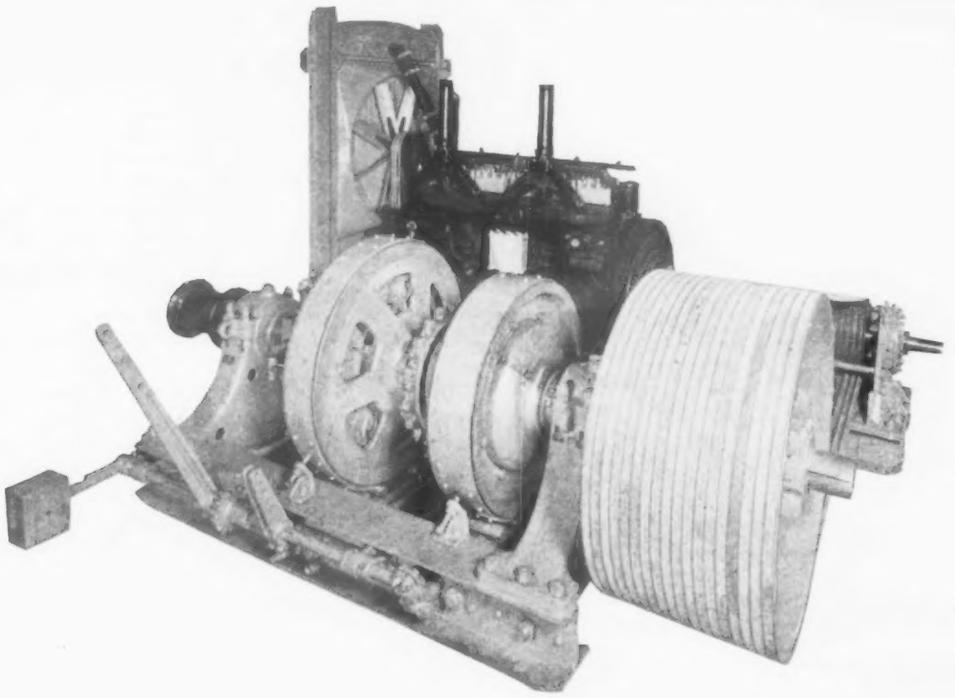
Power Driven Slush Pump

7½ X14"



DESCRIPTIVE BULLETIN
No. 56 A
SENT ON REQUEST

THE
NATIONAL SUPPLY
COMPANIES



5,000 Foot PORTABLE DRILLING RIG

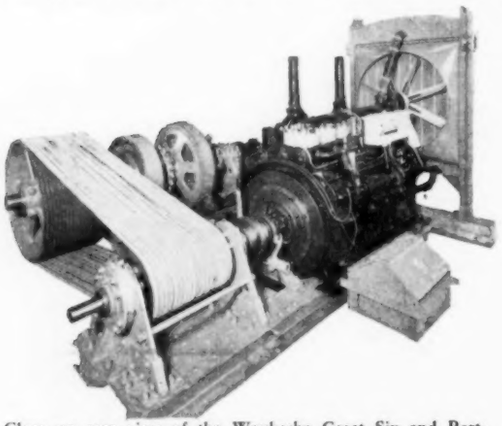
The chief advantage of this rig is portability and economical operation. It can be moved to location in two separate units on oil field trucks; can be operated on natural gas or gasoline; and in places where water and fuel are at a premium.

The 300 horse power developed by the Waukesha Great Six Engine is transmitted direct to draw works line shaft through Portable 6″ x 42″ Reverse Unit.

FOR COMPLETE SPECIFICATIONS SEE OTHER SIDE

PORTABLE RIG CO. INC.
HOUSTON, TEXAS

SPECIFICATIONS
5,000-FOOT PORTABLE DRILLING RIG



Close up rear view of the Waukesha Great Six and Portable Reversible Clutch Unit showing mountings of Texrope Drive on pedestals.

Showing the Waukesha Great Six Engine (300 H. P.) driving 7¼"x18" Mud Hog Slush Pump. It is adapted to drive any power slush pump requiring its horsepower capacity.

The manner of transmitting power from the Waukesha 6-OK 300 H. P. Engine to Portable Reverse Unit is illustrated in upper left view. This is accomplished through single plate clutch mounted direct to flywheel on stub shaft. A flexible coupling is in turn mounted between this and outboard bearing shaft assembly, assuring proper alignment without loss in friction. Power is transmitted through 18 Texrope belts. Pulley is mounted between two structural steel bearing mountings, enclosing self-aligning anti-friction bearings.

In lower view the power transmitted from Engine to Reverse Unit is in turn transmitted from split type sprocket located between clutch housings direct to line shaft of any standard type draw works, permitting a forward and reverse motion to line shaft by operation of control lever located at driller's position.

Weight of entire unit is carried between two box type steel pedestals, each equipped with double Timken Roller Bearings, entire assembly being held down by means of eight 1¼" bolts through grooved caps, machined as part of pedestals.

Shaft is 6" special analysis steel ground to close limits of accuracy to accommodate anti-friction bearings.

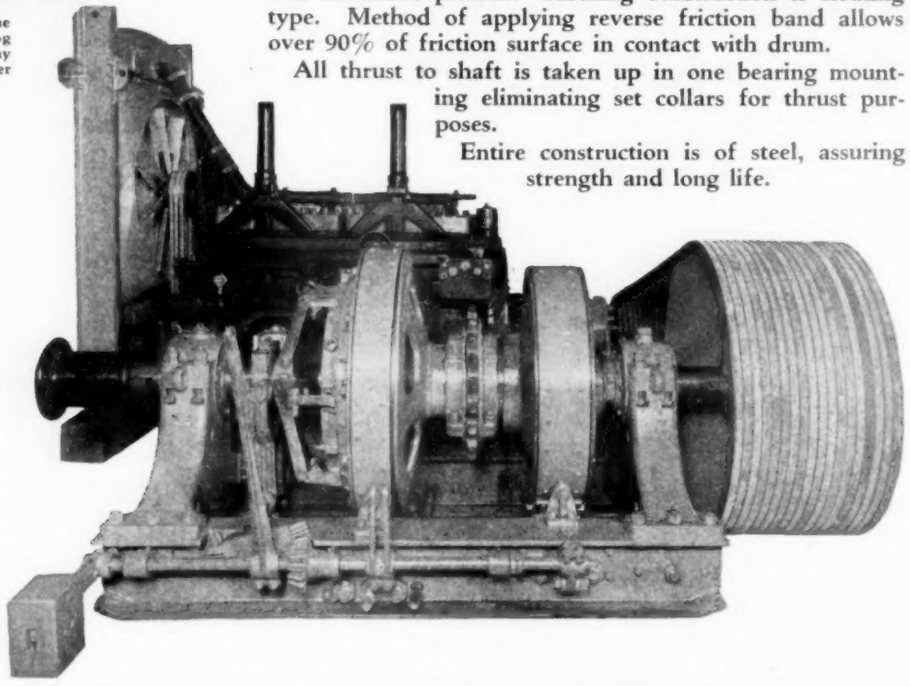
Forward clutch is of single plate construction with friction segments on both sides of plate and is so constructed that it is not necessary to remove shaft from bearings or disturb any of assembly except tie bolts in clutch housing to renew friction discs when they become worn. This is due to split construction of driving plates.

Clutch Housing on which sprocket is mounted is carried on two American Roller Bearings which provide ample capacity for shock loads incurred.

Reverse Clutch is of oil bath type with steel cut gears and hardened pinions. Housing construction is floating type. Method of applying reverse friction band allows over 90% of friction surface in contact with drum.

All thrust to shaft is taken up in one bearing mounting eliminating set collars for thrust purposes.

Entire construction is of steel, assuring strength and long life.



Close up view of Portable Reverse Clutch Unit and Waukesha Great Six 300 H. P. Engine. Entire Unit is carried between two box type steel pedestals, each equipped with double Timken anti-friction bearings. Split type draw works drive sprocket for rotary or split type pulley for standard tools, is mounted between clutch and Reverse Housing and can be readily changed.

PORTABLE RIG CO. INC.

HOUSTON, TEXAS

FOAM SMOTHERING PUMPS

Smothering in a blanket of foam remains the one sure way of extinguishing an oil fire. This duplex installation of Byron Jackson Foam Smothering Pumps is arranged for alternative gasoline engine or electric motor drive to assure smothering streams when needed. This company also builds a complete line of centrifugal pumps for every operating condition.

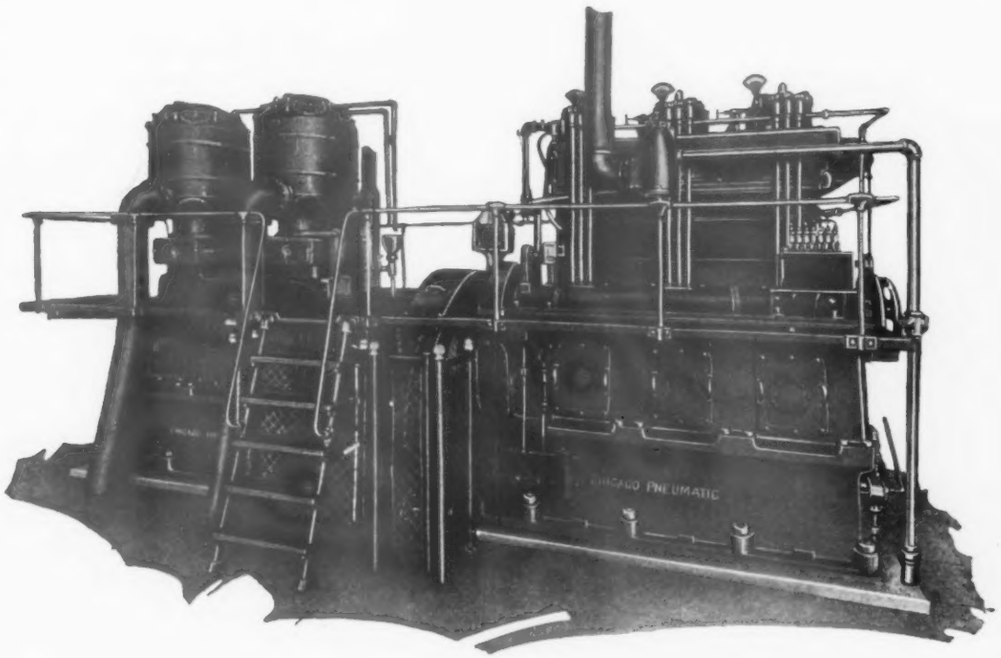
SINCE 1872
BYRON JACKSON CO.
Factories: BERKELEY, Los Angeles, Visalia, Calif.
Branches: NEW YORK and CHICAGO
San Francisco, Portland, Salt Lake, Tulsa, Dallas, Phoenix

BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

WRIGHT MANUFACTURING CO. BRIDGEPORT, CONN. U.S.A.
WRIGHT
MODEL BB
HOIST
The WRIGHT HIGH SPEED
Hoist is Supreme
It Stands out as the Successful Answer to every Hoist Requirement
BACKED BY 21 PLUS POINTS OF HOIST SUPERIORITY
Ask Your Jobber
WRIGHT MFG. COMPANY
BRIDGEPORT, CONN.
ACCO
AN ASSOCIATE COMPANY OF AMERICAN CHAIN COMPANY INC.
IN BUSINESS for YOUR Safety

A Modern Compressor for Gasoline Extraction and Oil Field Service



This is an ideal combination of a 200 B.H. P., vertical, three-cylinder, four-cycle CP Gas Engine, directly coupled to a CP vertical, duplex, double-acting compressor, for gasoline extraction, gas boosting and general oil field service. The unit offers the following outstanding advantages:

1—Ease of installation.

2—Small and inexpensive foundation.

3—Small floor space.

4—Smooth operation with minimum of vibration.

5—High overall efficiency, the gas consumption being only 9 cu. ft. per B.H.P. hour at full load.

6—The engine is heavily built and can be converted for Diesel operation where the gas supply becomes inadequate.

7—A large number of compressor cylinder sizes is available for pressures of 25 to 1000 pounds.

8—All engine and compressor cylinders have removable liners.

9—Compressor discharge valves are on the bottom and the cylinders are self-draining.

10—Force feed lubrication for all cylinders and bearings.

11—All engine valve cages are removable. The exhaust valve cages as well as the exhaust manifold, are water cooled.

12—A device is provided for stopping the engine if the lubricating oil supply fails.

May we send you complete details?

Chicago Pneumatic Tool Co.

6 East 44th Street, NEW YORK, N. Y.

Sales and Service Branches all over the World

Whealton & Townsend Co., Inc., *Authorized Distributors*

417 South Hill St., Los Angeles
1502 Magnolia Bldg., Dallas
120 East Brady St., Tulsa
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The Audit Bureau of Circulations

Statements and Reports

The publication members of the Audit Bureau of Circulations, other than newspapers, present semi-annual statements to the advertising field as of June 30 and December 31 each year.

Once a year, the traveling auditors of the A. B. C. visit the offices of the publication members and examine the documentary evidence behind their circulation claims. These auditors carry on their work as space buyers' representatives, thoroughly free from publisher influence, since the rules under which they operate are established by the Board of Directors, the majority of whom are advertisers and agents.

The publisher's statements and the audit reports, appearing at various times through the year, give space buyers a constant flow of up-to-date information.

Some of the leading facts which the publisher's statement announces in detail are:

The publication's name and address; when it is published; its net paid circulation by averages and also in the form of a state analysis of a typical issue; its unpaid distribution; the field it covers; in the case of magazines, the percentages of subscription circulation in cities of various sizes; in the case of business papers, an analysis based on the occupations of subscribers; in the case of farm papers, the percentages of subscription circulation on R. F. D. routes and in towns of various sizes; the publication's subscription rates and special subscription offers; if returns are accepted; when premiums or clubbing offers are made or circulation contests are employed; how subscriptions are obtained; subscriptions in arrears; etc.

The audit report verifies the publisher's statements or points out their inaccuracies, elaborates on several important subjects such as the circulation methods employed, etc.

The advertiser is necessarily interested in the economic use of his advertising appropriation. When he deals with an A. B. C. publication, his study of its statements and audits gives him the fullest opportunity to eliminate waste.

THE GULF PUBLISHING COMPANY
HOUSTON, TEXAS
Publishers
The OIL WEEKLY *The* PETROLEUM MARKETER
The REFINER & NATURAL GASOLINE MANUFACTURER
Our publications are all members of The Audit Bureau of Circulations. Our Circulation statements are verified by trained auditors of the Bureau.

The K-P Super Head

on the K-P Straight Hole Bit

"Great effects are produced by small causes," says a Chinese proverb. Many a crooked well is the result of a crooked start near the surface, say we. The K-P Super Head on the K-P Straight Hole Bit makes surface hole straight, fast, and economically. It reams as it cuts—no after reaming necessary. It won't quit on hard formations. The K-P Super Head uses the same size self-sharpening blades and reamers as are used in drilling the main hole.

Ask some operator in your field who is using K-P Super Heads and Bits or write for leaflet B3.

KENNEDYE-PLUMB CORPORATION

Backed By 70 Years of Knowing How

ST. LOUIS, U. S. A.

at your Supply Store, or in California, at K-P BIT CO., Los Angeles

"The Line of Least Resistance"

Made to Measure for the Oil Man!

The engineering department of the TRIMONT COMPANY keeps a vigilant eye on the needs of the oil industry. The TRIMO pipe wrench can be said to have been made to the measure of the oil man. Every improvement in TRIMO construction has been dictated by the petroleum industry. TRIMO's tremendous reserve of strength, long wear assured by replacement parts, and safety through braced construction—all these features mean dollars saved in the oil field.

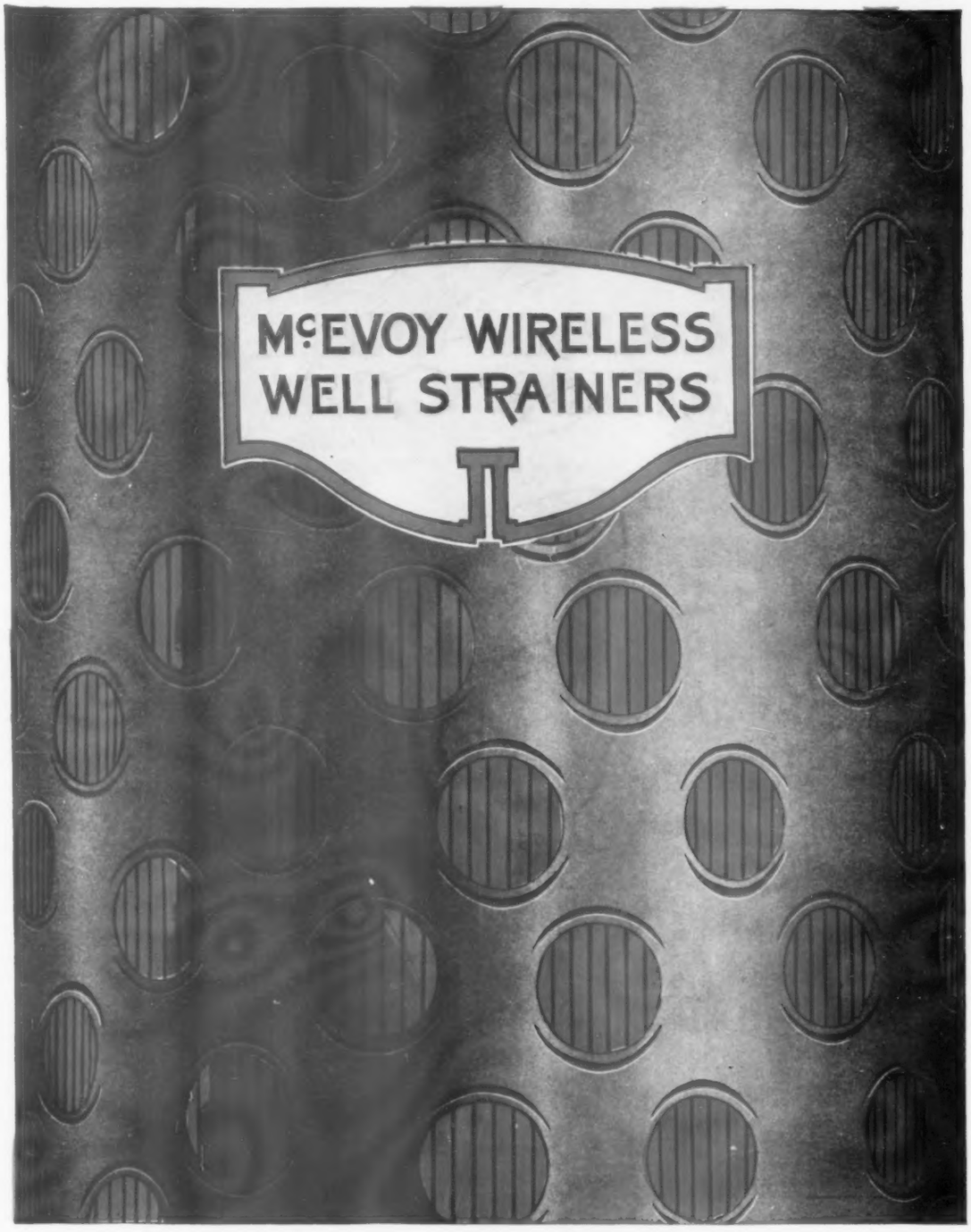
TRIMO is a wrench made especially for the oil man. No wonder it continues to serve him better than any other wrench on the market.

TRIMO Pipe Wrench

All Steel for Strength - - - - Replaceable Jaws for Lifetime Wear

Made by TRIMONT MFG. CO., Inc., Roxbury (Boston), Mass.

THE McEVOY STRAINER HAS NEVER BEEN EXCELLED

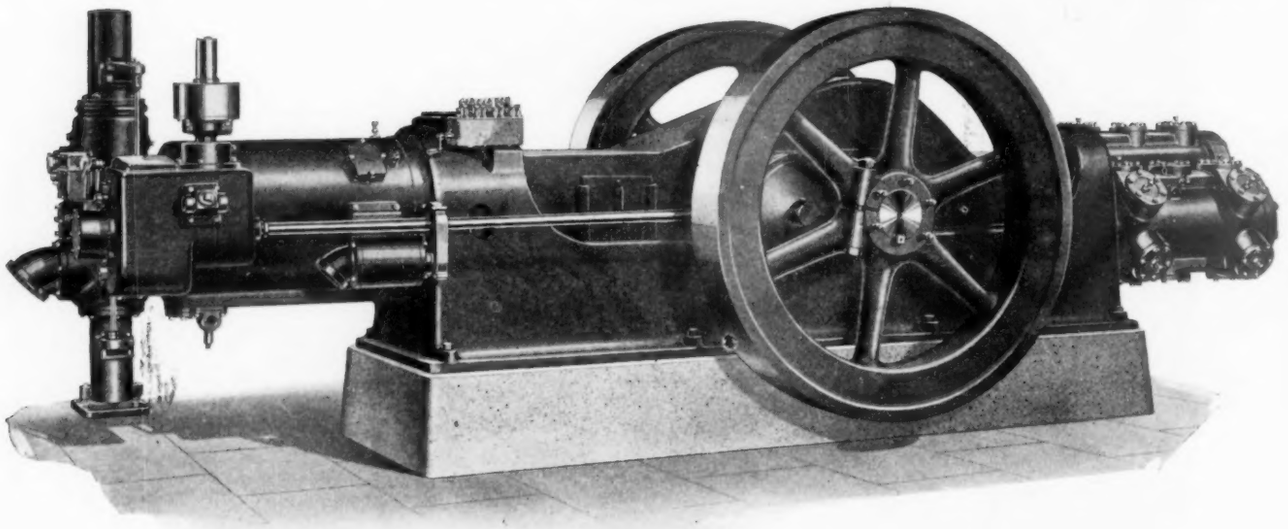


J. H. McEVOY & COMPANY

HOUSTON, TEXAS, U.S.A.

Pacific Coast Branch: McEVOY SCREEN PIPE CO., 2428 E. 56 St., Los Angeles, Calif.

New Pattin Super-Power Now Fitted With Timken Bearings



THIS new 100 H. P. Direct Driven Compressor carries an Auxiliary Exhaust Valve that practically eliminates all valve trouble. It embodies features that stamp it as a unit far in advance of any heretofore offered, and it will carry the full rated horse power load.

It is a four cycle, single acting, center crank type, fully enclosed, with two fly wheels and has the following features—

Auxiliary Exhaust Valve

The main feature of our new engine is an Auxiliary Exhaust Port Sleeve Valve, (Patent applied for). It eliminates valve trouble. As practically all fire is taken out of cylinder through the center of this sleeve valve, and does not come in contact with the finished surface of the main valves, the greatest wear is eliminated. After exhaust takes place, this valve closes, and prevents loss of incoming charge or fouling by exhaust gases. No fire goes through the main valves.

Assembly of Compressor Cylinders

Each cylinder is independent of the other. The pistons or valves can be removed without changing a single pipe connection or affecting the alignment in any way.

This 100 H.P. Direct Driven Compressor is self contained—one foundation, and has no outboard bearing or supports of any kind to get out of line and cause trouble.

It has high speed governor, gear driven, Timken Bearings, with wedge adjustment, completely enclosed combination splash and force feed lubrication, and automatic air starter.

A special feature has been built into this unit, which permits it to operate on very lean air gas.

It is destined to be the sensation of 1929—write today for literature on this Super Power Unit.

Suitable for Gas Booster work—any pressure from 50 to 400 pounds.

Equipped with MEISTER VALVES

Meister Valves are made of vanadium steel and weigh less than two ounces each. On account of their lightness they are absolutely noiseless and will never require grinding.

Seats are made separate from cylinder and are readily accessible for cleaning or repairing without removing a single connection. As they are free from troublesome springs, they can be used in any position. Here are some features of Meister Valves.

1—Improved mechanical and volumetric efficiency over the old style poppet valve.
2—Elimination of lubrication of any kind for the valve itself.
3—Silent operation at the highest piston speeds.
4—Valves never require regrinding.
5—Elimination of troublesome springs.
6—Simplification of air end, owing to the absence of all complicated valve operating mechanism.

Write for prices, or inquire of any of our representatives.

ASK FOR CIRCULAR NO. 32

THE PATTIN BROTHERS COMPANY

MARIETTA, OHIO

Tulsa, Okla.	Nowata, Okla.	Wichita Falls, Texas	Putnam, Texas	Bradford, Pa.
A. S. Dunnington	J. Barnes	J. W. Noland	Putnam Supply Co.	Blaisdell Machinery Co.

PATTIN PRODUCTS

Gas Engines
Pumping Powers
Water Pumps
Air and Gas Compressors
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Torpedo Reels and Clamps
Steel Storage Tanks
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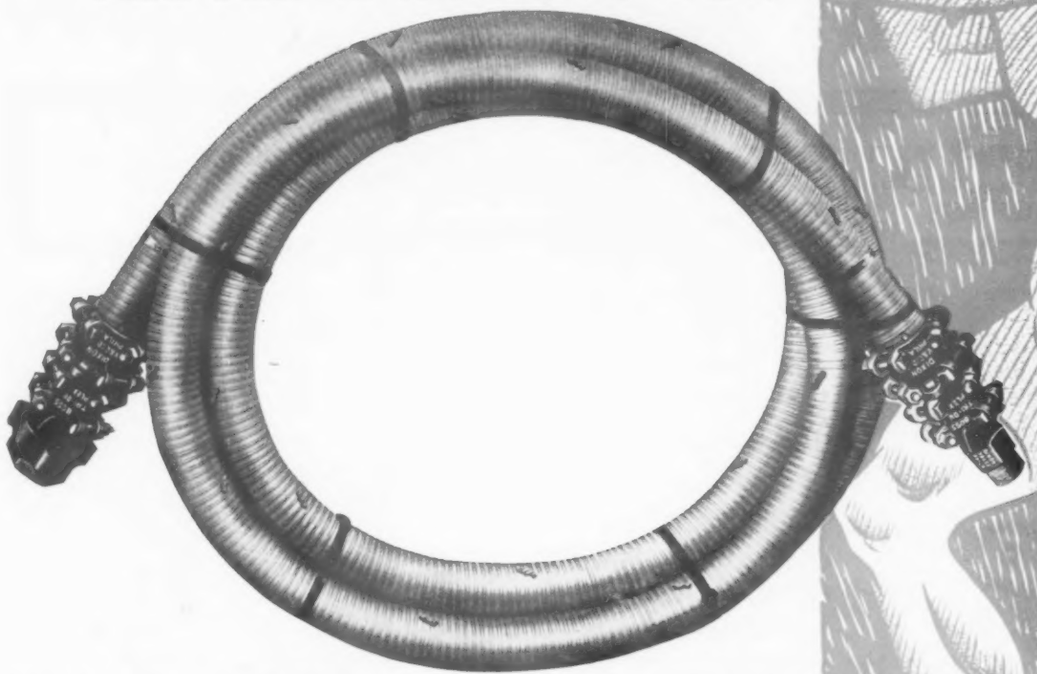
THE PATTIN BROS CO

GOODALL

SEMI-METALLIC ROTARY HOSE

and SUPER Rotary Hose with BOSS Tri-Duplex Couplings

STRENGTH *and* ENDURANCE



Visit the Continental Building and see why Goodall Semi-Metallic Rotary Hose has won such an enviable reputation for its brutal strength and amazing durability — meeting every condition and test encountered in drilling wells in the United States and many foreign countries. For exceptionally severe conditions we recommend Goodall Semi-Metallic SUPER Rotary Hose. The BOSS Tri-Duplex Rotary Coupling with six piece clamp, twelve staggered bolts and staggered dovetailing fingers, is leak-proof, blow-off proof and seepage-proof.

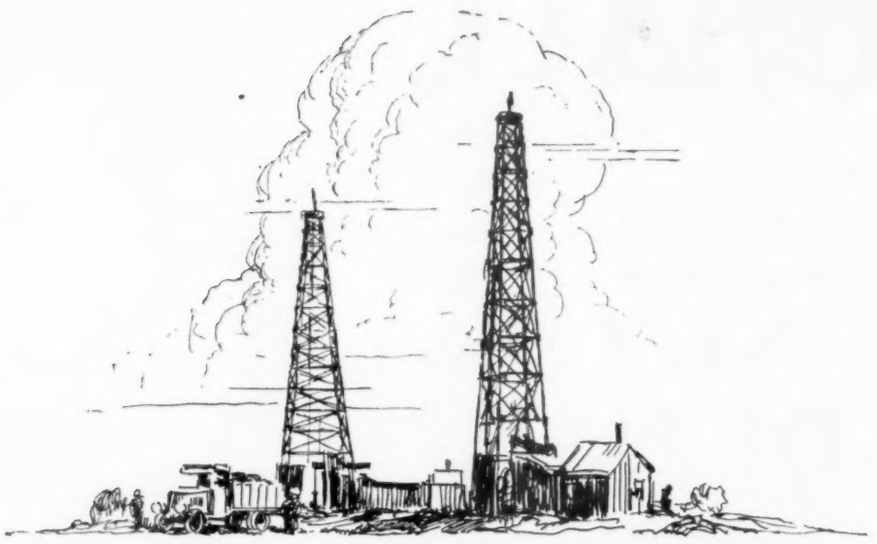
"If Continental Sells It . . . . . There Is No Better"

THE CONTINENTAL SUPPLY COMPANY

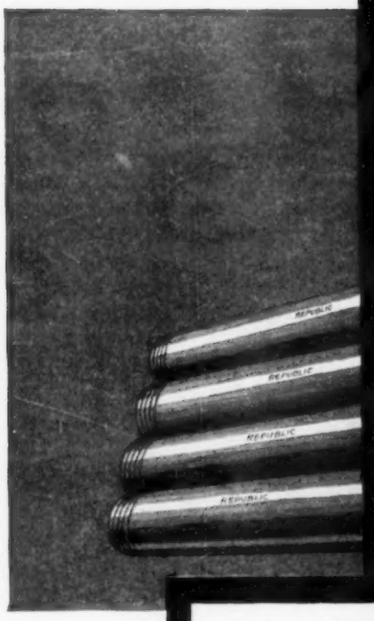
General Offices: ST. LOUIS. *Export Offices:* 74 Trinity Court, New York
London Offices: 316-17 Dashwood House, Old Broad St., E. C. 2

The Continental Supply Company, Ltd.
224 Traders Building Calgary, Alberta, Canada

CONTINENTAL



REPUBLIC PIPE IS PROTECTION!

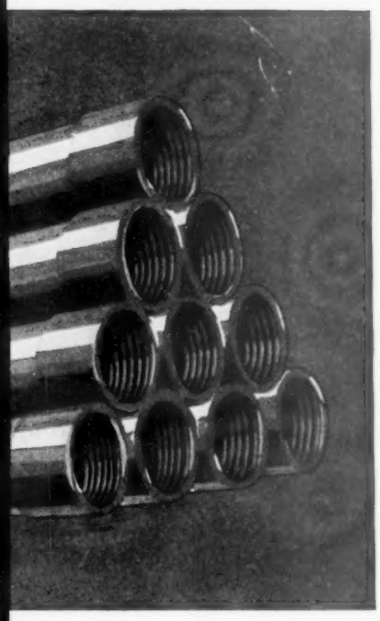


WHEREVER Republic Steel Pipe is used, and for whatever purpose, there is a surety of safe, trouble-free, lasting service.

Because good steel pipe is identified and guarded by the name "Republic."

Owning and controlling every operation, from ore mining to completed pipe, guarantees strength, uniformity, most desirable physical and chemical properties and every other quality necessary to the best modern steel pipe.

Republic Pipe in the Oil and Gas fields is production protection.

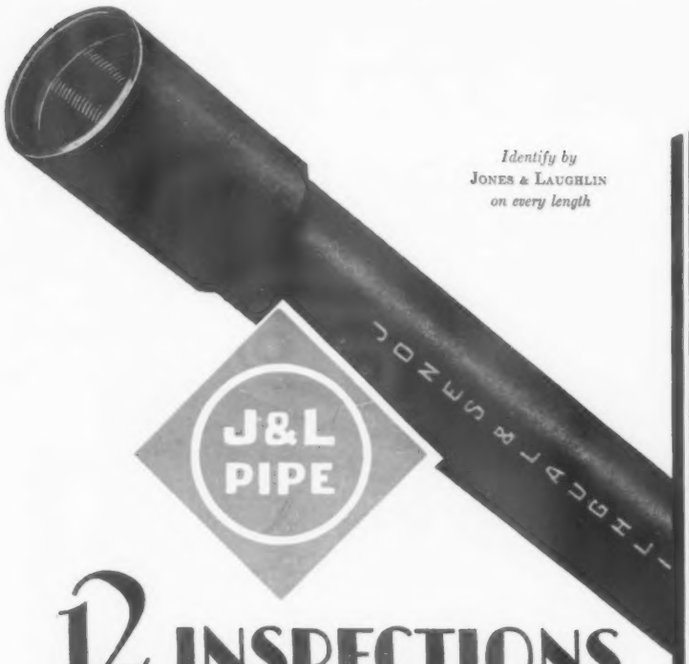


Tubing
Casing
Line and
Rotary
Drill Pipe

Branch Offices

Birmingham	Detroit
Boston	El Paso
Buffalo	Los Angeles
Chicago	New York
Cincinnati	Philadelphia
Cleveland	Pittsburgh
Dallas	San Francisco
Denver	Seattle
St. Louis	

REPUBLIC
IRON & STEEL CO. YOUNGSTOWN O.
PIPE & CASING



Identify by
JONES & LAUGHLIN
on every length

12 INSPECTIONS INSURE UNIFORMLY HIGH QUALITY

J & L's adequate resources, ownership control of each process from ore mining to pipe making, nearly 80 years of experience in iron and steel making, and rigid inspection through each step of manufacture, are your guarantees that every length of J & L Seamless Casing you order is as nearly perfect as seamless casing can be made. Beginning with chemical and physical tests of raw materials, iron ore, coke and limestone (from J & L's own mines and quarries), inspection on J & L Seamless continues without interruption until the twelfth and final checking is made as the pipe is loaded for shipment.

In addition to the twelve tests and inspections (listed at right) a milling machine is kept busy constantly machining out samples for pull tests to insure tensile strength safely within requirements of the trade. Drillings are also taken during mill operations to be analyzed for chemical composition, and samples are microphotographed frequently to check grain structure.

Oil men declare: "There's no better Seamless made than J & L."

JONES & LAUGHLIN STEEL CORPORATION

Jones & Laughlin Building
PITTSBURGH - - PENNSYLVANIA

INSPECTIONS OF J & L SEAMLESS

1 Chemical tests of raw materials made at the mines and quarries, also before charging into blast furnaces.

2 Thorough analysis of pig iron produced by blast furnaces and metallurgical inspections as pig iron is made into steel in open hearth furnaces.

3 Chemical analysis for composition as steel is poured from open hearth furnaces into ingot molds.

4 Ingots rolled into blooms under temperature control.

5 Blooms pickled in strong acid to bring out defects. Inspectors pass blooms only after visible defects have been chipped out with pneumatic chisels.

6 As seamless tubes come from the straightener, inspectors scrutinize both outside and inside surfaces with the aid of specially designed lamps.

7 Ends trimmed; then pipe is inspected for wall thickness and correct outside diameter and roundness.

8 Pipe threads checked with certified gages and second inspection made for flaws, to insure clean cut accurate threads of proper pitch and taper.

9 Couplings as produced in our mills are closely inspected for correct tapping, threads accurately gaged for pitch and taper and checked on specially designed machines for alignment.

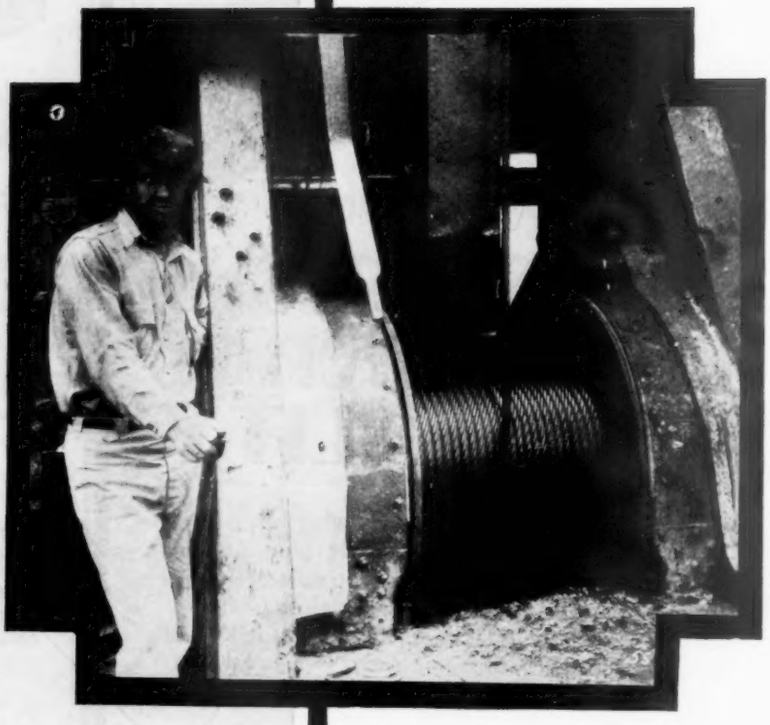
10 All items of previous inspections rechecked on testing benches, and stencil marks applied.

11 Each length given hydrostatic pressure test before rust-resisting coating is applied and pipe is delivered to shipping platform.

12 Final inspection of each length as it is loaded for shipment.

J&L STEEL

1½ Miles of Drilling with a Williamsport Wire Line



This well is being watched with greatest interest. It is a supreme test for the Wire Line, because it requires a super-strength line to handle a mile and a half of drill pipe.

No driller could afford to take a chance on anything but proven quality in a drilling line — so they selected Williamsport certified lines.

WILLIAMSPORT WIRE ROPE COMPANY
Main Office and Works: Williamsport, Pa.
General Sales Offices: 122 S. Michigan Ave., Chicago, Illinois.
Oil Country Sales Offices: Williamsport Bldg., Fourth and Midland Valley Tracks, Tulsa, Okla

WILLIAMSPORT

Distributed by the
Bridgeport Machine Company, Wichita, Kansas, and all of their Mid-Continent Branches

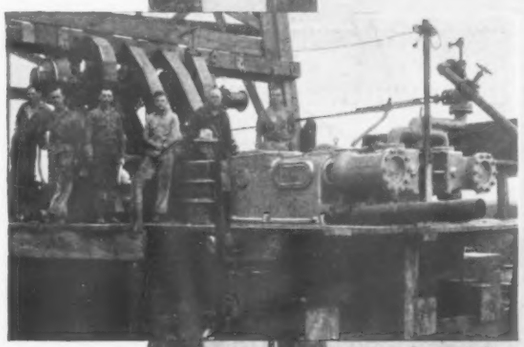
2—14 x 17¼ x 16 Acme Pumps

TITUSVILLE OIL COUNTRY MACHINERY
BUILT WITH RESERVE RUGGEDNESS

WHAT IS IT YOU NEED?
Boilers, Pumps, Engines

TITUSVILLE makes them all. And they are made to give complete satisfaction.

These photographs taken at Esperson Dome show the installation of Titusville Oil Country Equipment on the Harvey S. Smith holdings. Their selection here is but further proof of the ready acceptance Titusville Oil Country equipment enjoys among oil men the world over.



THE TITUSVILLE IRON WORKS
TITUSVILLE, PA.

Distributors
The Continental Supply Co.

For Export
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72-76 Trinity Court,
New York City, N. Y.

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California Machinery Supply Co.
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12 x 12 Acme full enclosed engine equipped with roller bearings

2—100 HP 225 lb. W. P. Acme Boilers

TITUSVILLE
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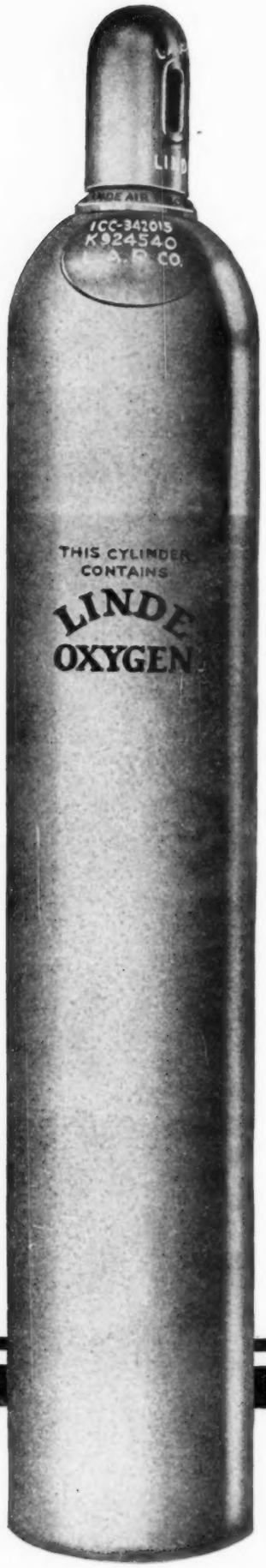
GAS ENGINES — PUMPS — BOILERS — DRILLING RIGS — STEAM ENGINES



LINDE OXYGEN

Available Anywhere

LINDE Oxygen is a quality product—standard for more than two decades. Its economical application to your particular requirements is assured by the operative assistance and engineering counsel of Linde Process Service.

64 Linde Plants and 154 Warehouse Stocks are located in key cities throughout the country. This vast production and distribution system makes Linde Oxygen available anywhere at little or no transportation cost.

THE LINDE AIR PRODUCTS CO.

Unit of Union Carbide and Carbon Corporation

UCC

General Offices: Carbide and Carbon Building
30 East 42nd Street, New York

For More Oil Money

use a

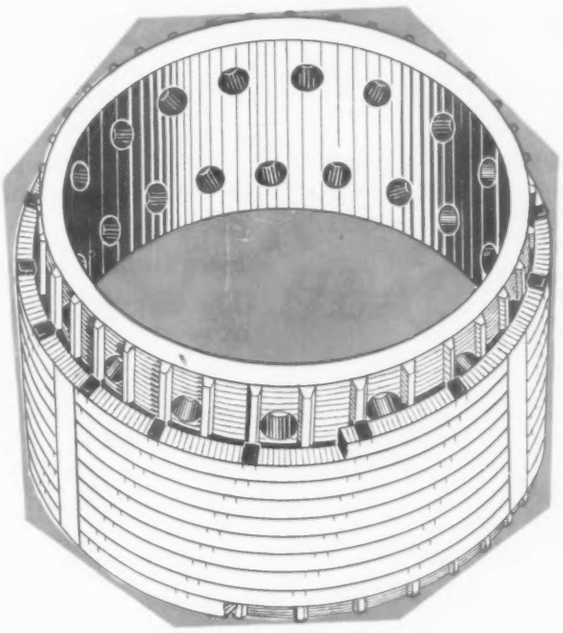
STANCLIFF

"MORE OIL" SCREEN

IN STANCLIFF SCREENS the inlet area alone is greater than the area of perforations. ALL the STANCLIFF is a screen—not just the holes. This feature increases the potential value of the sand by screening more oil. Increased production means increased profits. The life of your well depends on the life of your screen, and with this increased screening surface the inlet velocity is reduced, thus cutting down fluid friction and lengthening the life of the screen.

NOTE IN THE ILLUSTRATION THAT the entire area of the pipe is screening surface. Numerous practical oil men who have made fair comparisons know from actual experience how much faster oil screens where the entire surface admits the oil than where only small perforations admit the oil.

The reasons for this are immediately evident to the engineer. The increased screening area reduces inlet velocity, thereby reducing fluid friction and allowing greater volume of fluid flow through the screen at a given pressure in the well. This reduced velocity reduces sand cutting and gives longer life to the screen.



1. The outside diameter of the Stancliff Well Screen is less than the diameter of the couplings and can be set through any pipe that will pass the couplings.
2. Ribs on pipe allow .061 of an inch for oil circulation and permit free flowing of oil into pipe, after straining through wires. The ribs strengthen the pipe as much as perforations have weakened it AN IMPORTANT ADVANTAGE OVER OTHERS.
3. Square wire is used to give greater life without "sanding," because sand must cut through entire width of wire before affecting screen.
4. The square wire is lugged from top to bottom at regular intervals, uniformly spacing and bracing wire at bottom as well as top.
5. By varying spacing lugs on wire, we make strainer to screen any size sand on any size or kind of pipe.
6. Has parallel spacing between the wires, thus facilitating cleaning the strainer. No chance to clog up under pump pressure when cleaning as is the case with some other screens not made with square-faced wire.

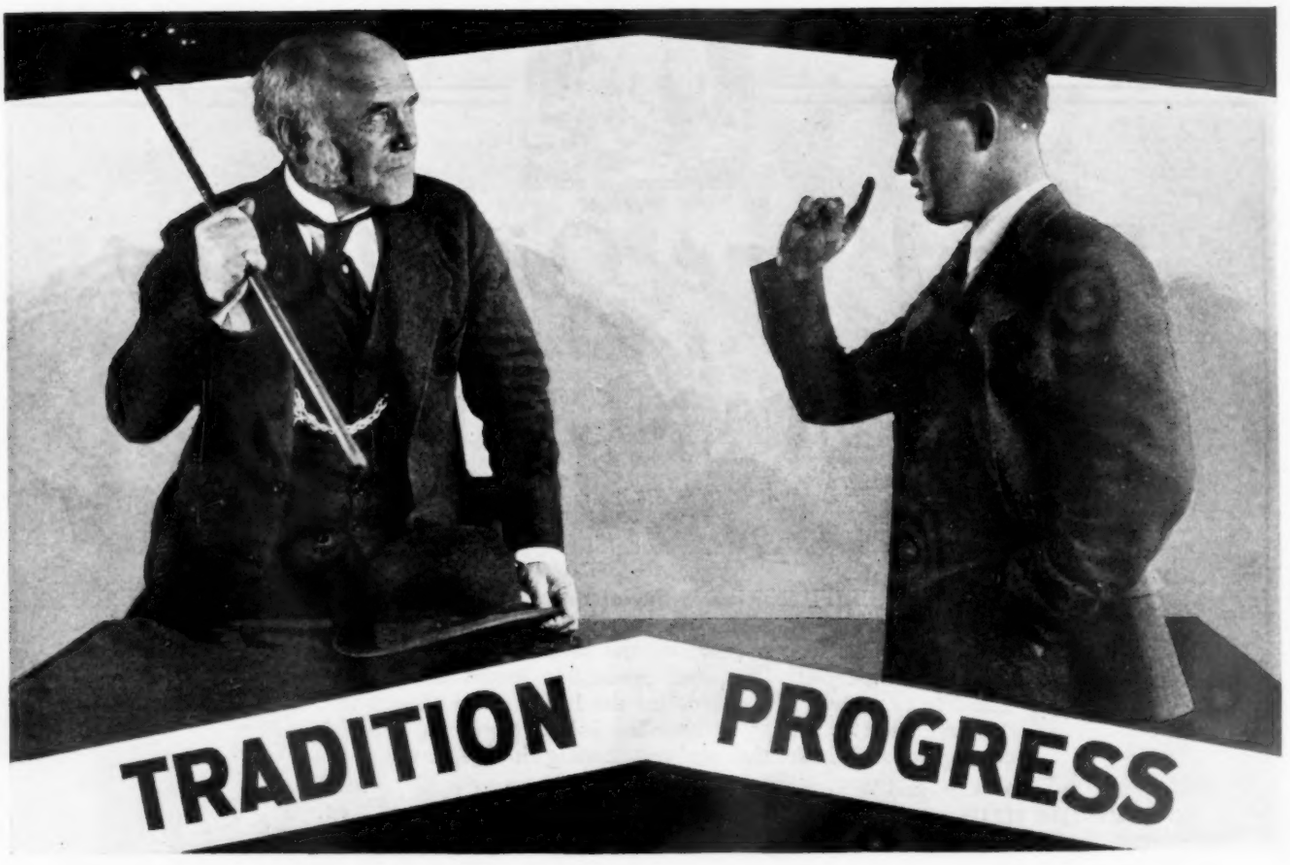
Screen Your Oil Faster and Make More Money

Write for complete information

HOWARD SMITH COMPANY

2412 Railroad Avenue at Sawyer Street

Phone P-0131 HOUSTON TEXAS **P. O. Box 688**



"Here, Lad—

From the number of bidders we encounter on pipe line jobs I'm beginning to feel that we must watch our step in buying the new welders."

The Lincoln "Stable-Arc" Welder

— welds easier
— makes better welds
— permits greater output because of the steady uniform arc throughout entire welding range, which is the result of:

Variable voltage design
Laminated magnetic circuit
Separately-excited generator field
Double control of welding heat
All steel construction

No other welder has all these features.

"No, Pop—

We must watch the other fellows step—which is what I haven't been doing anything else but.

Here's what I've found on 16 recent pipe line jobs:

The biggest one had 110 'Stable-Arc' welders at work;

The next largest had 91 'Stable-Arc's';

Another had 48 'Stable-Arc's'—another 16—three more jobs had 10 'Stable-Arc's' on each and on the remaining nine jobs, the 'Stable-Arc's' ran from 6 down to 2 on a six mile line.

They tell me that the Lincoln machine is the fastest of the bunch, so we can't afford to get into pipe line work with anything slower.

So the steps we take to keep abreast of competition should be foot ones."

The Lincoln Electric Co., Dept. No. 33-10, Cleveland, Ohio

"Stable-Arc"

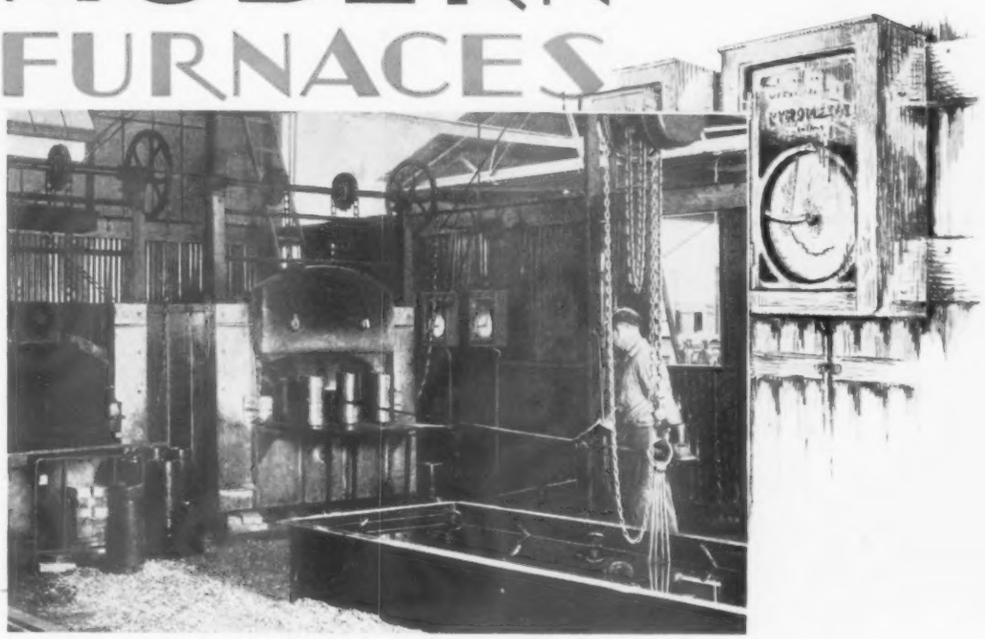
M-115

LINCOLN WELDER

FOR GREATER STRENGTH

Only the most

MODERN FURNACES



Forgings by WESTERN FORGE CO. Los Angeles Calif.

under

PYROMETER CONTROL

are used in HEAT TREATING

EMSCO

PRESS FORGED TOOL JOINTS

The pyrometer eliminates all guess work in the heat treatment of Emsco Tool Joints. Uniformity in heat treatment assures uniformity in the finished product

EMSCO D+B — Protected by Steel — EQUIPMENT CO. — LOS ANGELES, CALIFORNIA — HOUSTON, TEXAS; DALLAS, TEXAS — EXPORT OFFICE: 150 BROADWAY, NEW YORK CITY, N. Y. — U.S.A. — THE EMSCO ENGINEERING CO., LTD. LONDON, ENG.

All Emsco and D+B Products (Except Derricks) Sold Exclusively in Mid-Continent Fields by The Continental Supply Company

EMSCO STEEL EQUIPPED WELLS ARE SAFE

This is the seventh of a series of advertisements featuring the Emsco *process of manufacture of Tool Joints*

West Texas Acid Water—Here's Pipe That Defies It!

Acid water is the bane of operators in West Texas. Its corrosive effect on ordinary pipe is disastrous—but not on Reading 5-Point Pipe. That is why operators in these tough fields have turned to Reading 5-Point Pipe in order to secure uninterrupted production.

Reading 5-Point Casing, Tubing and Line Pipe are made of corrosion-defying Genuine Puddled Wrought Iron — the same wrought iron that has given such remarkable service wherever it has been used. Reading 5-Point Pipe is the only wrought iron pipe that is double-welded. It stands supreme for oil-field uses.

READING IRON COMPANY, Reading, Pennsylvania

Atlanta · Baltimore · Cleveland · New York · Philadelphia · Boston
Cincinnati · St. Louis · Chicago · New Orleans · Buffalo
Houston · Tulsa · Seattle · San Francisco · Detroit
Pittsburgh · Ft. Worth · Los Angeles · Kansas City

As an added improvement all Reading Galvanized Couplings for Reading 5-Point Tubing are now furnished with galvanized threads.

Reading pipe distributed by: Frick-Reid Supply Corp., Bradford Supply Co., Republic Supply Co., Superior Tube Co., Reading Iron Co. of Texas.

GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

IDLE LABOR

When well made pipe arrives with damaged threads . . .

Who is to blame when pipe arrives at your well with the unprotected threads battered and damaged? As far as you can determine, no one seems to be responsible and the buck is passed from the truck driver to the pipe manufacturer with you, the user, "holding the bag."

No Rethreading

Sometimes you can obtain adjustment on damaged pipe from your supply dealer but who wants to put up with the attendant expense of delays and idle crews in the meantime?

Perfect as when it leaves the Mill

Now, thanks to the patented Colona Pipe Thread Protectors, you can nip this damaged pipe situation in the bud by insisting that your favorite pipe and couplings be so protected at the mill. Many prominent pipe manufacturers have already adopted Colona Protectors.

So specify Colona protected pipe from your pipe dealer—it is perfect assurance that every length of pipe you receive is immediately ready to use.

Colona Division

PITTSBURGH SCREW AND BOLT CORP.

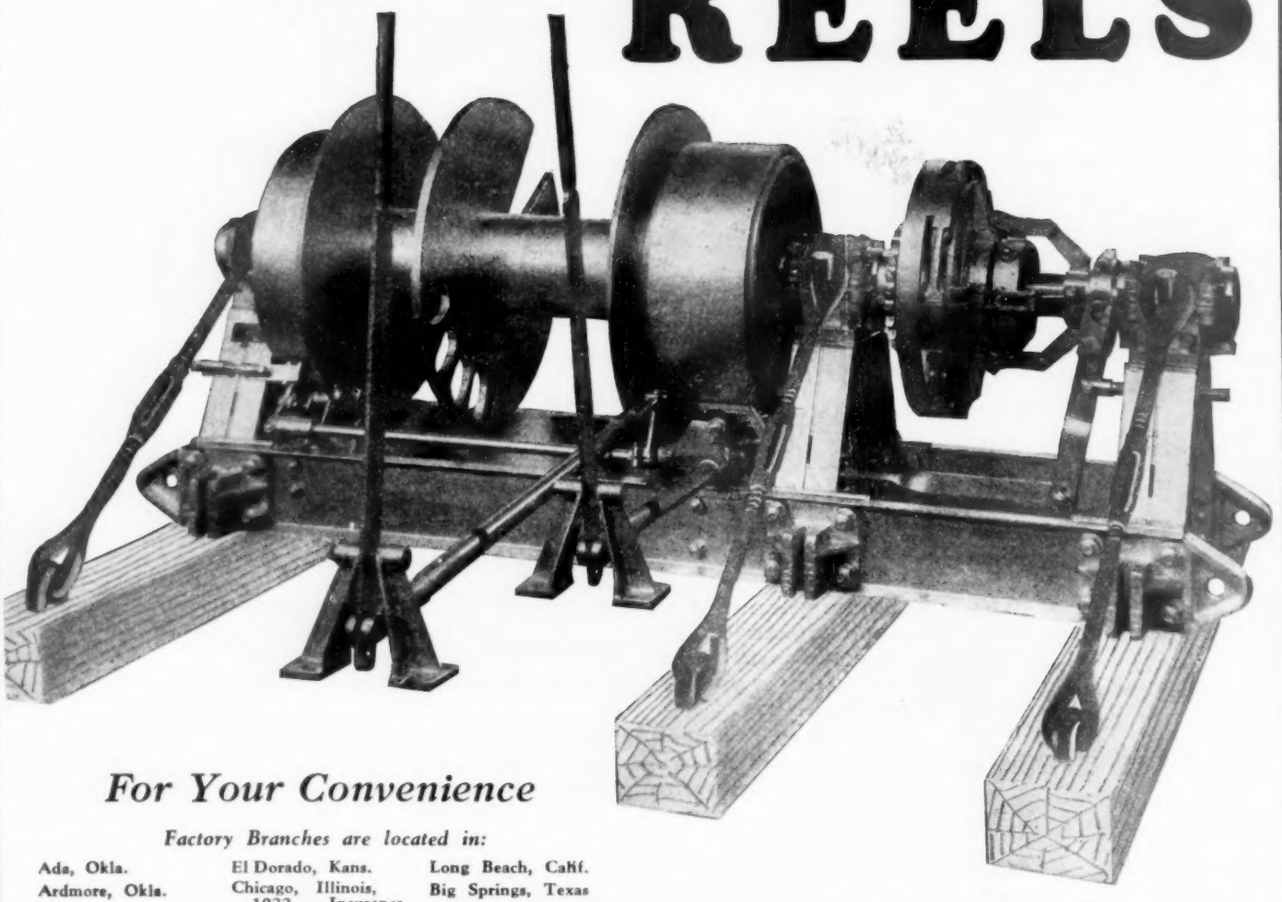
PITTSBURGH, PENNA.

COLONA

PIPE THREAD PROTECTORS

THE MARION LINE

HEAVY DUTY SAND REELS



For Your Convenience

Factory Branches are located in:

Ada, Okla.	El Dorado, Kans.	Long Beach, Calif.
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Wilson, Okla.	Salt Creek, Wyoming	Coleman, Texas
Valley Center, Kans.	Conrad, Montana	Electra, Texas
Wichita, Kans.	Kevin, Montana	Luling, Texas

The following catalog sections have been prepared for the users of Oil Well Equipment and will be mailed on request:—

Section 1—Derricks, Foundations, Samson Posts, Jack Posts, Crown Blocks, etc.
Section 2—Bull Wheels, Band Wheels, Tug Rims, Calf Wheels, Spooling Flanges, etc.
Section 3—Rig Irons, Sand Reels, Tool Safes, etc.
Section 4—Gas Engines, Clutches, etc.
Section 5—Band Wheel Powers, Geared Powers, Idlers, Pumpers, Gas Pumps, etc.
Section 6—Pumping Jacks, Sucker Rods, Pull Rods, Working Barrels, Pulling Machines, Surface Equipment, etc.
Section 7—Metal Buildings, Metal Engine Houses.
Section 8—Belting, Packing, Hose, Wire Line, Cordage, etc.

Supreme in Speed and Strength

Marion has developed two Heavy Duty Chain Driven Sand Reels for deep wells. No. 75 is for use where the well is not so deep and the work does not require the heaviest type of reel. No. 90 is for the deepest wells and are Supreme in Speed and Strength in their field. Both Reels are completely self contained, mounted on steel frames, ready to bolt down to sills.

Write for Bulletin No. 261. **It gives specifications of both No. 75 and No. 90 Reels.**

Marion Machine, Foundry & Supply Company

Marion, Indiana, U. S. A.

Construction that gives

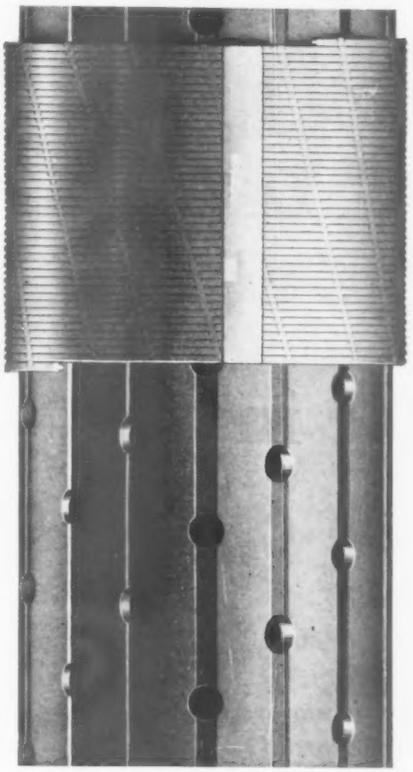
GREAT STRENGTH

The feature which makes the GETTY SOLID WRAPPED SCREEN strong in structure is the rolling the mesh of the screen into the T-head of the wire forming solid, substantial, square-faced spacing lugs. In the GETTY FACTORY superior methods of construction coil the wire, under severe tension and strong lateral pressure, firmly about the pipe which process insures a vise-like grip of the wire about the pipe.

In localities where the gas pressure is hard to control the GETTY SCREEN has been used successfully as a drill stem to drill down into place where it is set and the well finished. This is proof enough of its strong construction.

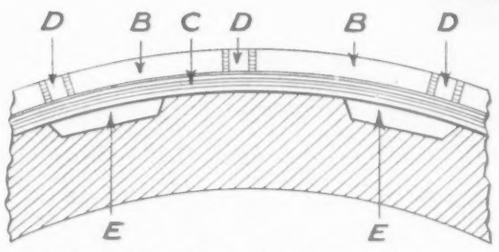
Controls the Sand

The accuracy of spacing which characterizes GETTY CONSTRUCTION has long been known. This is due to accurate standardization, correct methods, and careful supervision. Accuracy of spacing with structural strength constitutes a guaranty that the GETTY SCREEN will remain accurate after installation in the deepest wells regardless of the grief encountered while passing down by the rocky walls of crooked holes. The abrasion on the wires due to dragging against the walls of the hole has little or no effect.

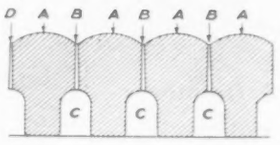


Screens Fast

All the exterior surface is a screen. The construction is such as to provide for the greatest possible degree of freedom for the travel of fluids from the point of entry to that of discharge at the interior of the pipe. There is unrestricted passage from any point in the screening surface to the interior whether the fluid enters opposite the pipe perforations or not. Study carefully the illustrations in this ad and note the advantages in screening capacity over other screens.



Enlarged End View of Portion of Screen



Enlarged View of Wires in Cross Section

On account of the rounded top of the wire, the points A-A-A-A receive the abrasion as the strainer passes down the rock sides of a crooked hole, and the edges of the entry slits B-B are protected. The broad, square-faced lugs, "D," hold the wires immovably in place. The entry slit "B" is slightly larger at the discharge side where the fluid enters the passage way "C" thus permitting the fluid to pass more freely between the wires to the vertical grooves E-E running lengthwise in the surface of the screen pipe.

Write for Complete Information on this Superior Screen

FRED I. GETTY

Cable Address: FIGOIL

JENNINGS, LA.

Telephone 129

EC&M Oil-Immersed Control

Flameproof *Vaporproof*

is Safe for use in Every Branch of the Oil Industry

Refiners, producers and distributors use EC&M Oil-Immersed Motor Starters for the control of their electric motors, because these starters are flame-proof.

Petroleum engineers know there is not the slightest chance for starting a fire due to an electric spark, when they use EC&M Flame-proof Control Equipment, because every main contact is operated under oil. And every overload contact is supplied to open and close either under oil or in a sealed vacuum.

Likewise, operation of these automatic flame-proof starters from remote control points, often surrounded by highly inflammable atmospheres, is made safe by EC&M Oil-Immersed Master Switches and Vapor-proof Push Buttons.

Bulletins 1042-F, 1047 & 1048 describe these starters and show how they provide safe handling of the output of an oil well, a pipe line, a cracking unit or a distributing station. Write for your copy.

THE ELECTRIC CONTROLLER & MFG. CO.

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SAN FRANCISCO-CALL BUILDING
MONTREAL-CASTLE BLDG.
TULSA-217 E. ARCHER ST.
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A *New* Norvell-Wilder Supply House

. . . of the Oil Industry
. . . for the Oil Industry

Its bricks are the sturdy policies that for eighteen years have made the house of Norvell-Wilder a dependable one. Its steel girders and beams reflect the strength of character to adhere to methods that have built a supply house that has earned the abiding confidence of oil men who appreciate doing business with people whose word is as good as their bond. Its mortar and cement exemplify the ties of friendship with oil men whose deeds of action and genius have done more to create wealth in the Southwest than men in any other industry.

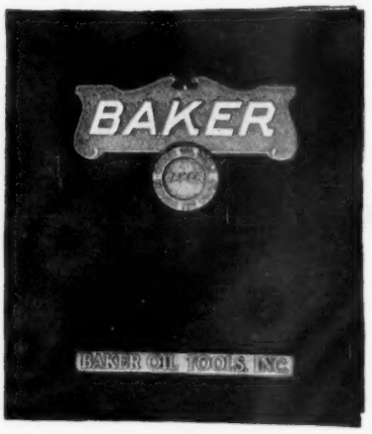
OIL MEN! This is your supply house. It was built through our learning the needs of the great, virile oil industry of the Southwest; and through our insistence that we supply these needs as promised — ON TIME.

Norvell-Wilder is truly an institution of the Oil Industry for the Oil Industry.

ALWAYS — CALL A NORVELL-WILDER MAN

NORVELL WILDER SUPPLY CO.

BEAUMONT HOUSTON SHREVEPORT FORT WORTH



The Baker Catalog Solves Difficult Problems

The Baker Loose-Leaf Catalog, profusely illustrated, not only contains a complete description of more than 40 Baker Oil Well Specialties, but, in addition to the specifications and prices, there will be found specific instructions for use and much other related material of great importance to the operator and field man. Much of the data included in this Catalog will not be found anywhere else. Many difficult problems are analyzed and solutions furnished from field experience. You NEED the Baker Catalog.

Baker Oil Well Specialties are Universally Endorsed

Baker Oil Well Specialties, of which there are more than 40, are used in every important oil field in the world. They have been Universally Endorsed because of their outstanding merit. Many companies are making Baker Equipment their "Standard" because they have come to know, through actual field experience, that Baker Equipment is made of the best materials, and will "stand the gaff."

There is a wide margin of safety built into every Baker tool. They are made to stand hard usage, and in addition, the abuse they will often be called upon to withstand.

Baker Oil Well Specialties are designed to perform a specific operation, and, in many cases, are the only tools of their kind manufactured. Notwithstanding this monopoly, Baker engineers are constantly striving for improvement and greater safety factors, which accounts for the noticeable superiority of Baker Equipment and its use the world over.

You Need This Important Volume for Personal Use

A careful perusal of the Baker Catalog will at once show you why it will be invaluable in your daily work. That's why it is to be found on the desks of so many busy operators and superintendents. Your copy is ready for mailing, so send in your request and learn about these items of equipment:

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Baker Combination Drilling Valve and Blowout Preventer
Baash-Ross (Hosmer) Auto Lock Packing Assembly
Baker-McLaine Float Plug (Screw or Slip Type)
Baker Pattern Casing Shoe
Plain, California, and Texas Pattern Casing Shoes
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Cement Dump Bailers
Cement Plugs, Sure-Shot
Cement Retainers, Model B
Baker-Burch Cement Float Shoe
Baker-Burch Side Hole Cement Float Shoe
Baker-Burch HIGH Side Hole Cement Float Shoe
Baker Cement Baffle Collar, with hole
Baker Cement Baffle Collar, solid
Baker Cement Bull Plug Casing Shoe
Baker Cement Float Collar
Baker Cement Guide Casing Shoe
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A Gulf Publishing Company Publication

The OIL WEEKLY

Member Audit Bureau of Circulations

VOLUME 55, No. 4

OCTOBER 11, 1929

Edited Weekly at Houston, Texas

SPENCER W. ROBINSON, EDITOR

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Published Weekly

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GULF PUBLISHING COMPANY

OFFICE OF PUBLICATION

3301 Buffalo Drive, Houston, Texas

R. L. DUDLEY, *President*

A. L. BURNS, *Gen'l Manager*

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Issued Friday of each week. Single copies 10 cents. Subscription price: Domestic $1.00 a year, Foreign $1.00 a year. Subscription restricted to those engaged in the producing and pipe line branches of the oil business or the manufacture and distribution of oil field supplies. Advertising rates on application.

QUICK and FLEXIBLE with SMOOTH STEADY POWER

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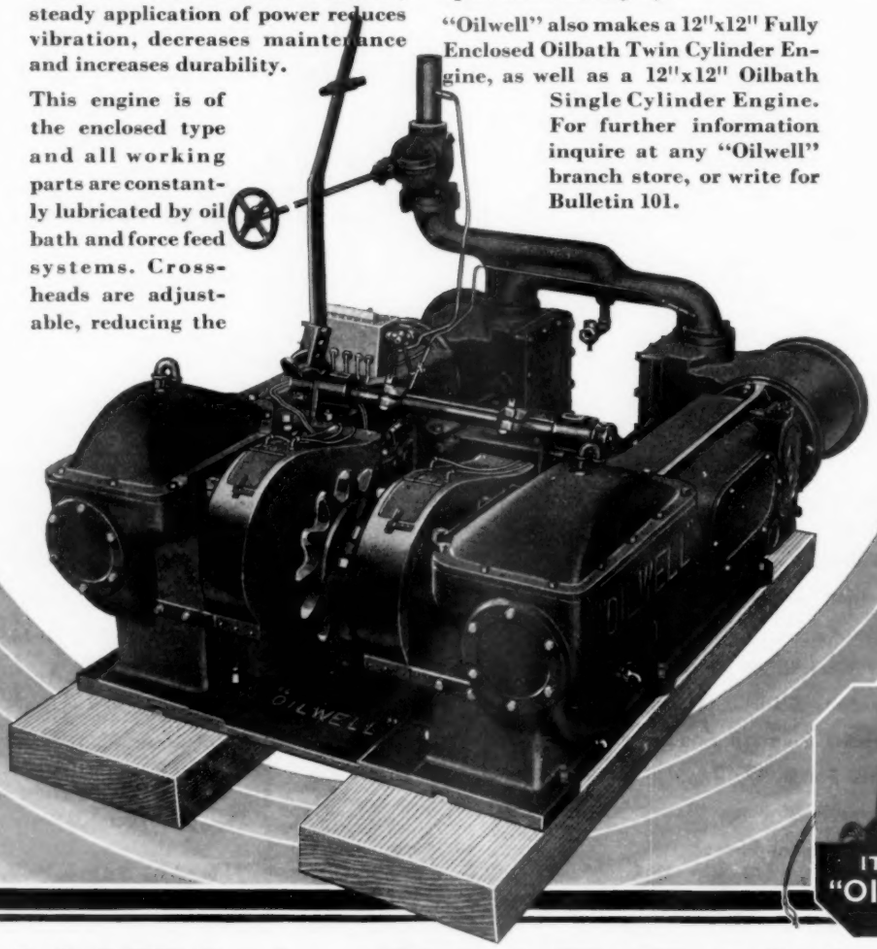

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OCT 14 1929

Volume 55, No. 4 *October 11, 1929*

The OIL WEEKLY

A GULF PUBLISHING COMPANY PUBLICATION

Exposition Presents Busy Scene As Sixth Session Opens

By GRADY TRIPLETT
Staff Representative

TULSA.—No one pair of eyes could survey all that went into the opening ceremonies of the Sixth International Petroleum Exposition here, the afternoon of October 5. As to the powers of sight and hearing, no hundred set of eyes and ears could have collected it all.

Those on the opening program had to compete with the ring of hammers, for there was still work to be done that afternoon. There were engines running and other noises so familiar to those of the oil industry. It was all extremely appropriate, however, and the speakers were prepared against distractions, for amplifiers had been placed over the grounds.

Overhead some intrepid aviator was putting a biplane through its paces, which at times had the resemblance of a leaf in a friendly breeze. There is no longer any novelty about an airplane but when a man insists on flying upside down and rolling his machine over and over with seeming abandon, there are many who still gaze in wonder.

During the day the "on to Tulsa" air derby was under way and entrants were flashing across the finish line at the exposition.

Senorita Paredes Opens Show

The event that officially opened the exposition was the unfurling of a huge American flag. Senorita Ester Paredes, daughter of Dr. Trinidad Paredes, head of the petroleum division of the department of industry of the Republic of Mexico and representative of that government at the exposition, pulled the cord which unfurled the flag. It fell into position between two derricks, while the band played the national anthem and boy scouts stood, bearing the colors of 20 foreign governments.

This event came at the end of the formal program of opening. At 2 o'clock William B. Way, general manager, announced the events on the program and introduced W. G. Skelly, president of the exposition. Mr. Skelly called upon the Rev. C. W. Kerr, pastor of the First Presbyterian church of Tulsa, who pronounced the invocation. The opening address of President Skelly followed. James A. Veasey, counsel of the Carter Oil Company, presided as master of ceremonies. He next introduced Mayor Dan Patton of Tulsa, who gave the address of welcome. The response came from Dr. Luis Calvani, minister of industry of Venezuela. Charles O'Connor, congressman of the second Oklahoma district, then spoke. E. B. Reeser, president of the American Petroleum Institute, then made the formal address of opening the Sixth International Petroleum Exposition and Congress, which will close October 12.

"A very significant factor," said Mr. Reeser, "in the 1929 Exposition is that the American Petroleum Institute has joined hands with the directors of the exposition in making it a success. It is of greatest importance to the oil industry that the two largest organizations are working side by side in the exposition.

"I will admit that the American Petroleum Institute is a big institution and Mr. W. G. Skelly, who sits here, will admit that the International Petroleum Exposition and Congress is a big institution. Therefore it is agreed that the two largest organizations of oil executives and workers are working hand in hand in this event.

Reeser and Skelly Talk

"Since others have spoken on the progress of the industry, I shall pay my tribute to the personnel of the exposition. Those leaders, whose untiring efforts and enthusiasm have made this exposition a success and possibility are deserving of great commendation. Looking over the list of directors it is easy to see how this is the greatest exposition of them all and in the future, with this wealth of talent and tireless effort, I can see nothing but continued success and prosperity for the exposition."

The address of President Skelly was as follows:

"This occasion marks the official opening of the Sixth Annual Petroleum Exposition and Congress, a mammoth exhibition and school of learning of one of the greastest industries.

"On behalf of the officers and directors of the Exposition and Congress I extend you a most hearty and cordial greeting, and sincerely appreciate your interest in the exposition and congress; and I especially want to thank all those from overseas who have traveled great distances in order to attend and our many friends who have contributed so effectively to the success of the exposition.

"The exposition this year is singularly important—more important than ever before; and due to the close association of the oil industry and aviation, an air meet is being held simultaneously. To those of you who are "listening in" I will say that at this moment airplanes, contesting in the races arranged, are flying over the field. A great number of airplanes are participating in the race and more than 300 airplanes and aviators from all over the country will attend the exposition.

"The exposition and congress has brought about good fellowship and better understanding among those engaged in this industry; problems are discussed and solved; the benefits of the solutions have been reaped by the entire industry and subsequently passed on to the public."

Even the weather, which had played disastrous tricks on past expositions, was at its best for the opening.

The program Sunday, the second day, was largely of sacred type. In the afternoon there was a special Salvation Army program, with Major Ernest R. Holz presiding. In the evening there was a sacred program with special music. Albert E. Galloway was general chairman. Mrs. Josephine Storey-White had charge of the music and Rev. Guy C. Tetirick was chairman of the ministerial committee.

A. I. M. E. Will Study Unit Operation

Committee Appointed at Tulsa To Report in February

TULSA.—The American Institute of Mining and Metallurgical Engineers, petroleum division, will make a special study of the advantages and means of promoting unit operation. A record of existing results from pools will be assembled for general discussion at the New York meeting in February. In order that this activity might become effective, a special committee of six was appointed to direct the study.

This important step was taken in the afternoon session of the engineers on October 4 at Tulsa. Earl Oliver of Ponca City made the motion. He was appointed chairman of the committee picked out by Dr. Joseph B. Umpleby, chairman of the division. Other members of the committee are as follows: K. C. Heald, Gulf Production Company, Pittsburgh; Joseph Jensen, Associated Oil Company, Los Angeles; A. W. Ambrose, Empire Companies, Bartlesville; H. H. Hill, Standard Oil Company of New Jersey, New York; F. H. Lahee, Sun Oil Company, Dallas, Texas.

This action was partly due to informal remarks made by E. B. Reeser, president of the American Petroleum Institute at a meeting the previous night, where he had pointed out the wisdom of unitization of oil pools, and the economic good that would result from such practice.

Pogue and Farish Speak

During the morning session of the engineers they turned for a while from the engineering practices and problems to listen to Joseph E. Pogue, prominent economist of New York City, talk on the "Economic Trend of the Petroleum Situation." Mr. Pogue pointed out that there were new economic forces at work in the petroleum industry, and that the prevailing law of oil and gas did not fit the present situation.

His statement was: "If present economic trends continue to their logical conclusion, the following changes in the Petroleum industry will be witnessed: 'The fundamental law of oil and gas, now at variance with economic needs and sound engineering practice will be changed, or modified, and oil pools will be operated as units.'

"Pending this change, the competitive pools will be more quickly depleted than the noncompetitive, or unit pools, leaving the latter segregated more and more in the hands of the larger companies (i. e. producers, affiliated with refining). This process will tend to lessen the role of the so-called independent producer. When this is appreciated, the independent producer, as a defense against his elimination from the oil industry will change his present opportunistic policy and work for a revision in the basic law of oil and gas, and also bend his efforts toward the furtherance of unitization and cooperation, developments more really essential to him than the integrated company."

W. S. Farish, president of the Humble Oil & Refining Company, and past-president of the American Petroleum Institute, was asked to make a reply to Pogue's talk. Farish said that he would much rather own a 50-acre lease in a unitized pool than 350 acres in a nonunitized area.

Large Attendance

More than 180 engineers were registered during the two-day session. Plans were for the boosting of membership during the Exposition. A booth was maintained in the technical building for this purpose.

In addition to the large attendance, the meeting may be registered as a very successful one. All of the papers read showed a lot of preparation, and brought forth much discussion.

Los Angeles Group Hears Papers On Operating Problems

LOS ANGELES.—Petroleum engineers and geologists from all parts of California and adjoining states attended the fall meeting of the Petroleum division of the American Institute of Mining and Metallurgical Engineers held here October 4. Although the attendance was far below that expected, it was representative and included many of the best known men in the industry.

Glenn D. Robertson, chairman of the Southern California Section of the Institute, presided at the morning session.

The opening address was given by Edwin Higgins, secretary and general manager of the California Oil and Gas Association. He outlined the California situation as it appears today, and also briefly reviewed the overproduction period of 1923 and 1924, when the industry was thrown completely out of balance by a flood of oil from Santa Fe Springs, Long Beach and Huntington Beach. Higgins outlined the provisions of the new gas saving law and explained how operators had formed themselves into groups which either favored the statute, were against it or were on the fence concerning its provisions, fairness and constitutionality.

"Hard Facing Materials," by Harry J. Morgan, was the first paper read and was well received. He outlined the methods used in applying these special materials and compared the efficiency of the various types of bits employed.

"Repressuring in the Selover Zone at Seal Beach and the Effect of Proration," prepared by A. H. Bell and E. W. Webb, proved one of the most interesting papers of the day. The immediate results obtained and the increased oil production in an edge well proved the value of repressuring in this area, it was shown.

C. M. Nickerson, petroleum engineer for the U. S. Navy department, read a paper on "Repressuring in Depleted Oil Zones in the Midway-Sunset Area." In this paper it was brought out that repressuring of a depleted lease porducing as little as three to five barrels per well per day is feasible.

"Well Spacing in the Long Beach Oil Field," a paper prepared by Stender Sweeney and D. C. Roberts and read by H. Norton Johnson gave a detailed outline of the cause and effect of well spacing in one of California's greatest fields.

A. C. Rubel presided at the afternoon session.

"Deep Sand Development in the Santa Fe Springs Oil Field," a joint paper by Joseph Jensen, McDowell Graves, William D. Goold and M. L. Gwin, was an outstanding number read at the afternoon session. The paper was a comprehensive review of the deep sand development in the state's most critical and interesting field.

Frank Reiber, consulting engineer, delivered a comprehensive talk, illustrated with many slides, on "Choice of Geophysical Methods." This subject is comparatively new in California and was especially well received.

"Flow Resistance of Oil—Gas Mixtures Through Vertical Pipes," a paper by L. C. Uren, P. P. Greghory, R. A. Hancock and G. V. Feskov, was read by R. A. Hancock and was a feature of the afternoon session.

J. Elmer Thomas of Fort Worth, Texas, read a timely paper on "Current Aspects of the Oil Industry."

John T. Breunich, special New York representative and Russell Fleming, field representative of the parent organization attended the meeting.

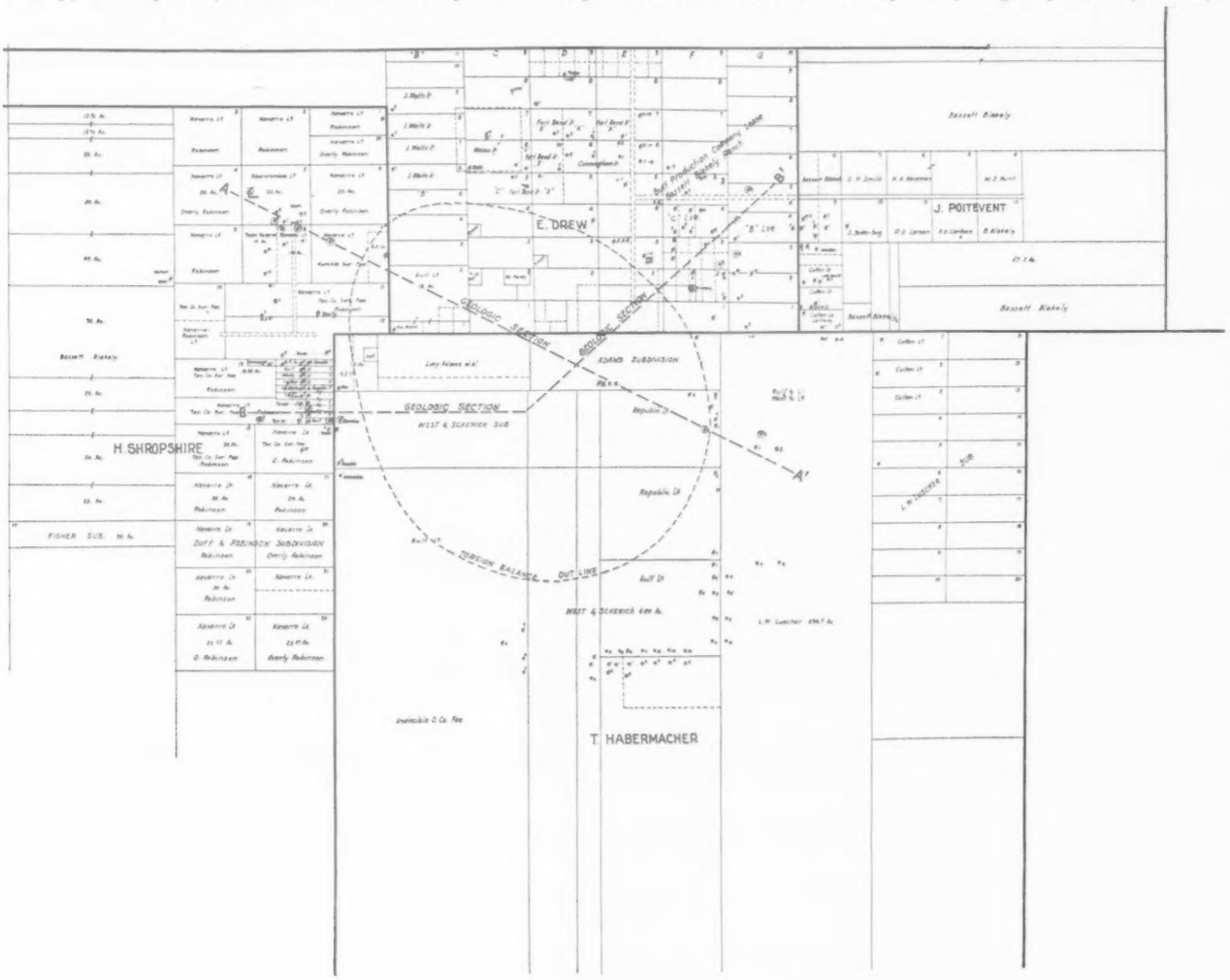
Comparison of Torsion Balance *and* Geologic Interpretations *of* Outline *of* Blue Ridge Salt Dome

By JACK LOGAN
Staff Representative

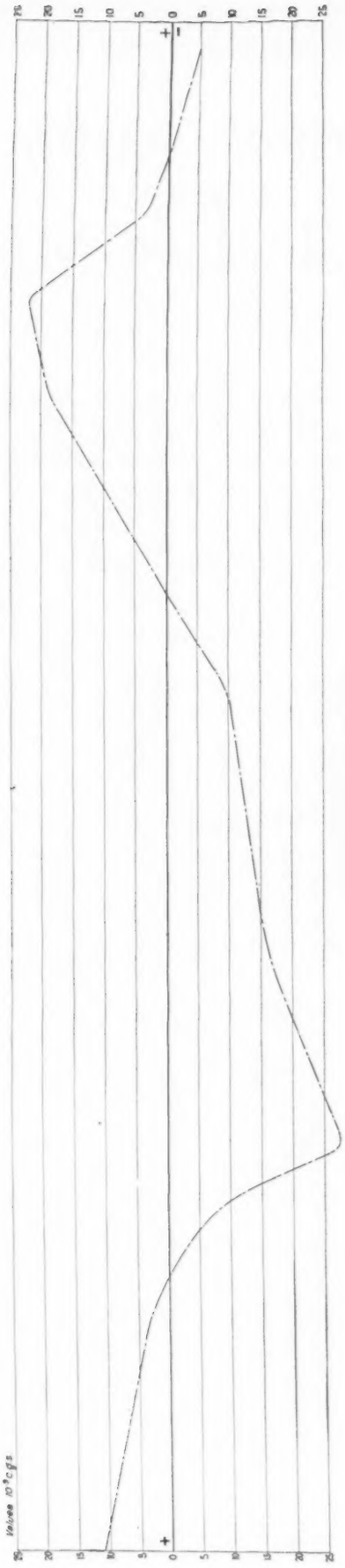
SINCE the middle of August, 1929, two Gulf Coast fields were opened for their first production, and both having been discovered and outlined by torsion balance, a discussion of the use of that particular instrument in geophysical prospecting should be of considerable current interest.

Those two new fields that were discovered by torsion balance are the Esperson dome, southwestern Liberty County, and Mykawa, southern Harris County. On Esperson dome two commercial wells, producing from three distinct sands, have been completed. The discovery well was Harvey S. Smith's (now Yount-Lee Oil Company's) Moores Bluff Corporation 1, located in the C. C. Brunson Survey. It came in August 15 estimated to be flowing 800 barrels daily of 24 gravity crude from 3304-20 feet, and two weeks later was still flowing 400 barrels pipe line oil daily. The other producer there is Cranfill-Reynolds Company's Esperson 2-A (formerly Union Exploration Company's Esperson 3), which came in flowing 100 barrels from 1809 feet, and later, having been deepened, came in flowing 175 barrels daily of 21.8 corrected gravity crude at 2270-76 feet.

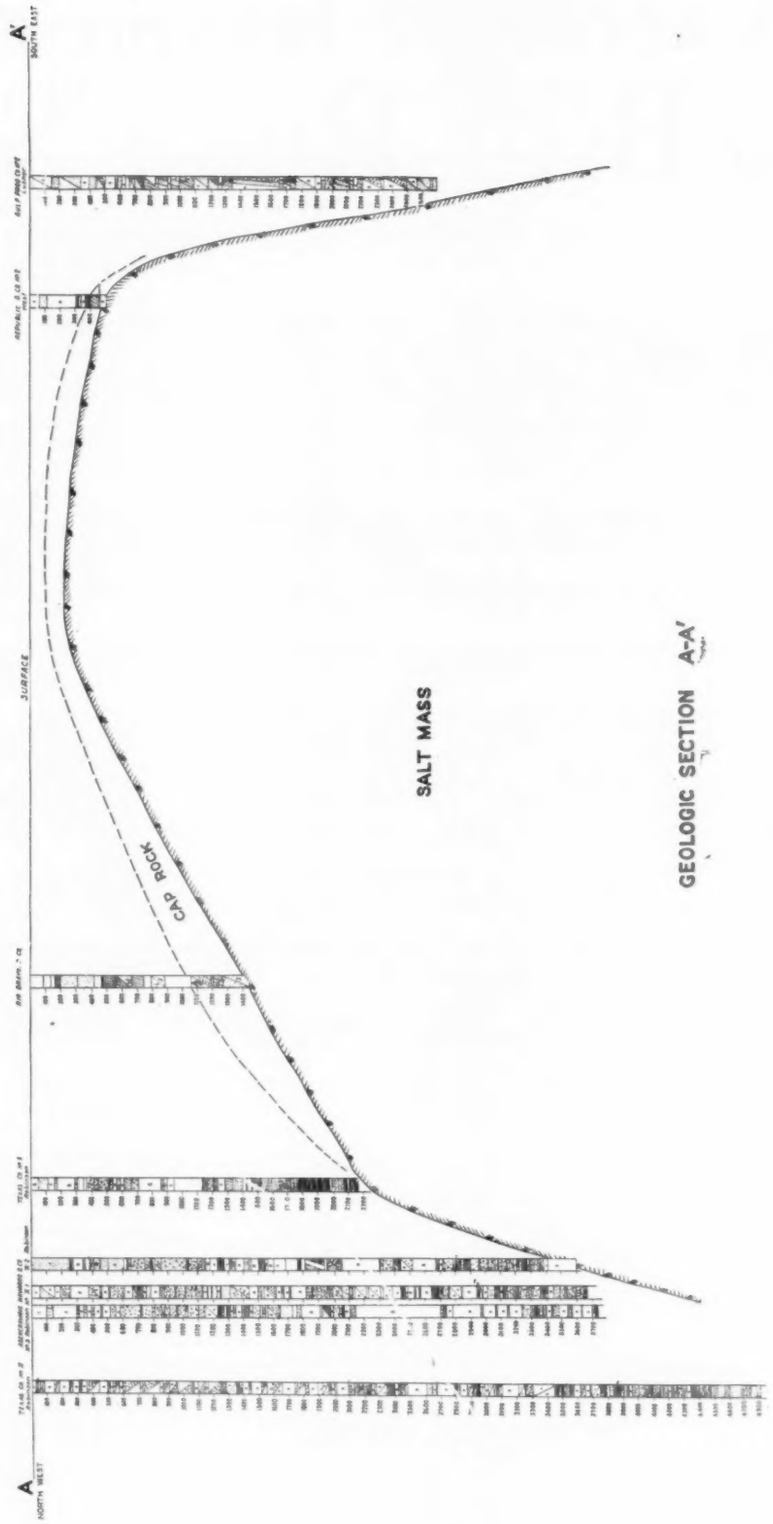
The discovery well of Esperson dome was the third test drilled there, following the torsion balance survey through which the dome was found. The discovery well, a gas producer, at My-



MAP
OF
LEASES AND OWNERSHIPS

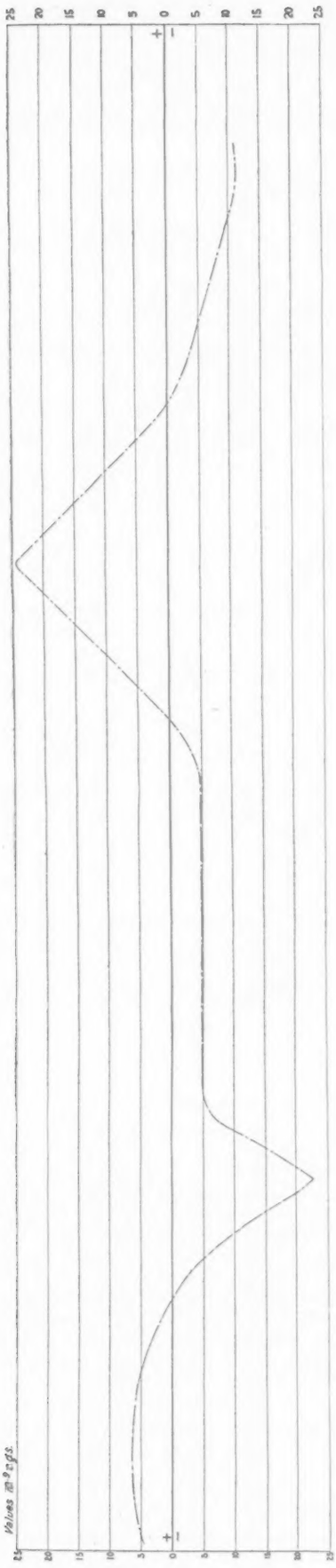


GRADIENT CURVE A-A'



SALT MASS

GEOLOGIC SECTION A-A'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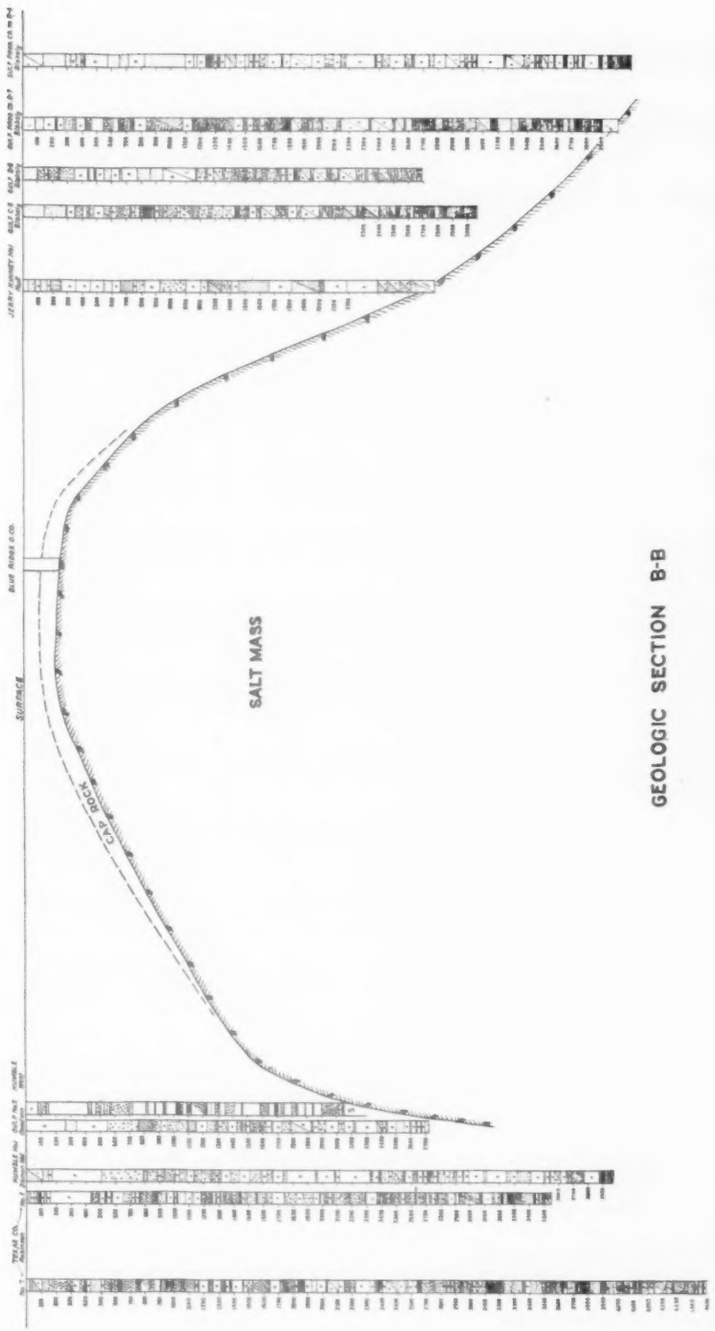
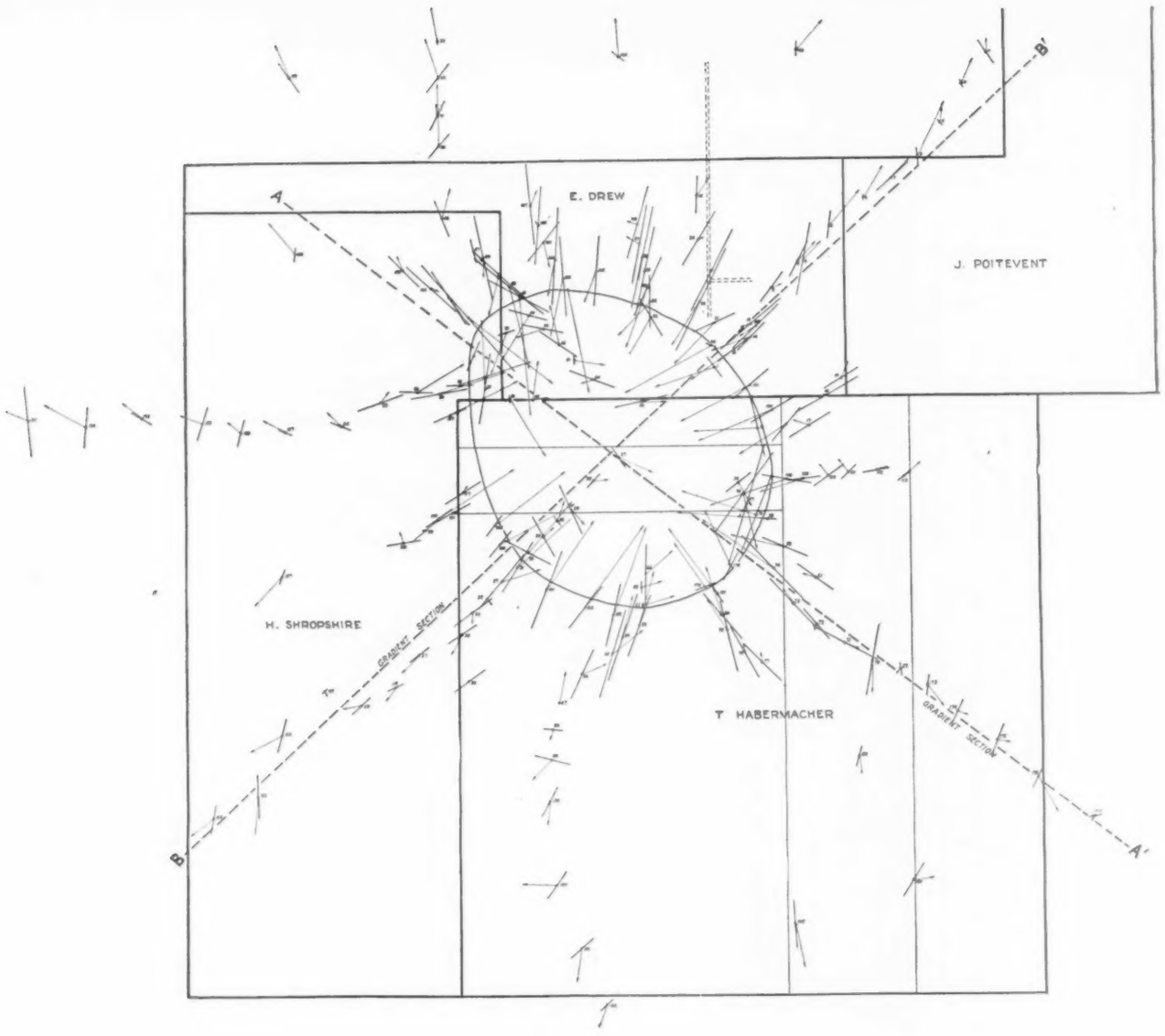
Values in milligals
GRADIENT CURVE B-B'


SALT MASS
CAP ROCK
GEOLOGIC SECTION B-B



GRADIENT MAP

kawa, was also the third test of that area following torsion balance work. It is Humble Oil & Refining Company's Irvin 2, which came in August 19 as a 50 million foot dry gas well at 4189 feet.

The success on the above named two domes had been preceded by even more phenomenal success on an earlier torsion balance prospect, Sugarland, Fort Bend County. On that dome the first test drilled following the torsion balance survey was an 800-barrel well.

Since the torsion balance came into practical use on the Gulf Coast in 1923, it has revealed six fields in which oil or gas production has been obtained, one dome where production has not yet been obtained, although the presence of the dome has been proved, several prospects where important showings have been encountered through the limited tests actually drilled, and approximately a score of fair prospects which are as yet untested by the drill.

Six Fields Found

Mention is made above of three of the torsion balance discoveries now productive: Sugarland and Esperson dome producing oil, and Mykawa producing gas. The other three fields found by torsion balance and subsequently productive are Allen dome, Brazoria County, Long Point, Fort Bend County, and Fannett, Jefferson County. Although credit usually goes to the seismograph for discovery of Fannett, the discovery by that method through a crew working for Gulf Production Company was simultaneous with and independent of a discovery of the same dome by torsion balance through a crew working for Roxana Petroleum Corporation. Several producing wells have been completed by Gulf Production Company at Fannett. Some production, although not in profitable quantity, has been obtained in deep wells of Shell Petroleum Corporation at Allen dome. However, the development there has consisted of a total of only about a dozen drilled tests. Long Point, the first of the domes discovered by torsion balance (in 1924), is apparently an important commercial sulphur dome. Of the total of more than 50 tests drilled at Long Point, a great number have been on or near the top of the dome for the purpose of determining the importance of the sulphur deposit. Only one test, however, has been finished as an oil producer, and it did not hold up long. It was Gulf Production Company's Wolf 13. In December, 1928, it was completed as a 100-

barrel pumper, one-half of that amount being oil, from above the cap rock at 600 feet. The known dome, found by torsion balance, where no production has yet been obtained is Clemens dome, Brazoria County. Various good showings have been encountered in the dozen or so tests that have been drilled there.

Aside from the above discussed torsion balance discoveries there have been six others in the Gulf Coast region which have been drilled or which are now being drilled. The first test is now drilling at Genoa, Harris County; Humble Oil & Refining Company's O. P. Woodburn 1, recently reported to have a slight gas showing around 4650 feet. Two deep tests have been drilled at Needville, Fort Bend County, and although one had important oil and gas showings, neither obtained production. The Almeda prospect in Harris County was tested with a 4400-foot well which had no important showings. Dickinson prospect, Galveston County, had one test, a 4875-foot test by Republic Production Company, but the only encouragement was a gas sand around 1000 feet. Shepherds Mott, Matagorda County, is an old prospect, but the presence of a double dome was confirmed in a torsion balance survey. Based on that survey, one test has been drilled and although it had several oil and gas showings, it was abandoned around 5000 feet, due to heaving shale. The sixth of this last group of torsion balance prospects is Vacuum Oil Company's prospect north of Roanoke, Jefferson Davis Parish, Louisiana. Incidentally, it is the only torsion balance prospect in Louisiana, with the exception of Eunice, St. Landry Parish, where one test, drilled to 4315 feet, was abandoned without finding important shows. Because of the preponderance of marshy land, and more or less inaccessible places, the seismograph has been the favorite geophysical instrument in South Louisiana. At Roanoke two tests have been completed, including one which flowed a little oil at 4200 feet but was not completed as a producer. The third test is now drilling there, and was recently reported to have a good oil show at 4335 feet.

Very few torsion balance maps have ever been published, inasmuch as the company financing the work tries, naturally, to obtain all leases possible in cases where a dome is indicated, and having obtained a large part of the acreage, does not care to publish private information which it has obtained at great expense, and which does not particularly concern the public.

Survey of Producing Field

However, for research and comparative purposes, a torsion balance survey was made by one torsion balance company of a dome which was discovered before the advent of geophysical prospecting, and without revealing any secrets or betraying any confidences, the results of the work on that dome may be published. The dome in question is Blue Ridge, Fort Bend County, and the results of the work are presented in the accompanying curves and maps. When all of the figures are considered, there is presented a graphic comparison of the torsion balance and geologic interpretations of the outline of the dome. The torsion balance survey was made in 1925 by the North American Exploration Company, which has to its credit the following discoveries: Sugarland, Mykawa, Genoa, Shepherds Mott, and the new Cheek prospect between Spindle Top and Fannett in Jefferson County. In the case of each of those discoveries, the geophysical work was done for H. C. Cockburn, who blocked the leases surrounding them. The results of that torsion balance survey were worked into the accompanying drawings along with the geologic sections by John F. Weinzierl of Houston, consulting geologist and geophysicist, who was formerly connected with the North American Exploration Company.

The first figure shows a map of leases and ownerships, with the producing wells around the dome forming a near-circle. Superimposed on that map and running parallel with the line of wells is the dotted curve showing the outline of the dome as revealed through the torsion balance survey of the North American Exploration Company. The difference in location of the torsion balance curve and the line of wells is due to shallowness of the top of the dome and the drilling of the wells to the relatively deep sands on the edges of the dome. The top of the cap rock over the salt plug rises to within 100 feet of the surface, and incidentally one company is commercially mining salt there through a shaft sunk into the top of the dome.

That torsion balance outline on the ownership map is a projection on it of the gradient map shown in another of of the accompanying figures. For the benefit of readers not familiar with torsion balance work or the principles upon which it is based, the following brief and general explanation is presented. If the earth were a perfect sphere, made of homogeneous substance, and were not in motion, gravity would be the same everywhere on the earth, and its direction would be vertical, that is, directly downward. But those conditions do not exist, and not being made entirely of the same material, there is uneven distribution of mass, resulting in deformation of the gravitational system. A body of density greater than the average exerts a definite gravitational attraction toward its center of gravity, and the intensity of the attraction is proportional to the excess of mass. In practical application of these observed laws, the torsion balance is acted upon by the attraction of the earth as a whole, the downward pull, but when the instrument is placed on the earth where there is an uneven distribution of mass as in the case of the heavy cap rock over a salt dome, that mass also exerts its attraction, which is horizontal. Thus the vital part of the torsion balance is pulled both downward and also slightly toward the cap rock of the salt dome. Thus what the torsion balance actually does it to measure the horizontal component of the force of gravity; it is said to measure the horizontal "gradient" of gravity. From readings of the torsion balance, both the magnitude and the direction of the horizontal gradient may be computed. Those factors, magnitude and direction, are indicated by means of the arrows on the accompanying gradient map. The arrows point in the direction of the maximum attraction, and the length of the arrow indicates the relative intensity of the attraction. Near to and on top of the dome the arrows are long, showing strong attraction. Farther out the arrows become shorter and shorter; and the attraction of the dome decreasing with distance from it, is opposed by the attraction of the earth as a whole. When the two forces are more or less equalized, the arrows are erratic in direction as well as short. It seems that they hardly know which direction to take. But as stations for the torsion balance are moved still farther away, the attraction of the dome is altogether overcome and the arrows follow regional trends.

The two accompanying figures showing "Gradient Curve A-A" and "Geologic section A-A′" reveal the close conformity between the shape of the dome as shown by the logs of wells and through the torsion balance work. The section of the dome involved in these two figures is that lying under the line A-A′ shown in the first illustration, the map of leases and ownership.

The other two illustrations, "Gradient Curve B-B′" and "Geologic Section B-B′" present the same picture but of that section of the dome lying under the curve B-B′ in the lease and ownership map. The torsion balance interpretation of the outline of the dome is seen to conform with startling accuracy with the geologic interpretation.

Explaining the Gradient Curves A-A′ and B-B′, the values 5, 10, 15, 20 and 25, both negative and positive, represent Eotvos units, by which gradients are measured in torsion balance work. The gradient is **positive** in the direction of the increasing intensity of gravity. The Eotvos unit may be further explained as measuring the difference in the intensity of gravity per horizontal centimeter, and consists of 1 X 10^{-9} dynes (per gram) per horizontal centimeter. A gradient of 1 Eotvos means an increase in the intensity of gravity per horizontal centimeter of about one trillionth the value of gravity.

NATIONALIZATION *Hits Snag in* Argentina

By ROY E. LEIGH
Special Foreign Repreentative

NATIONALIZATION of petroleum, which was one of the principal planks of the radical platform on which Hipolito Irigoyen was swept into the presidential office in the last Argentine general election, has not yet been accomplished. The properties of foreign oil companies may not be expropriated so quickly as certain political factions of the country would desire. It is true that the nationalization bill was passed promptly by the chamber of deputies on September 17, shortly after that body convened a year ago; but the senators have been so busy with wrangling over credentials and fighting week-end duels that they have not had opportunity to consider matters of legislation. This trend of affairs has been distinctly favorable to the oil industry, as the year of senatorial dead-lock has afforded an opportunity for campaign hysteria to subside and for the sober-thinking people of the country to weigh the pros and cons of nationalization dispassionately. Whereas, if the senate had been able to achieve parliamentary organization and settle down to business when the new administration came into power, it undoubtedly would have passed the petroleum bill as promptly as did the lower house. Observers now believe that the success of the nationalization scheme is no longer so certain as it appeared to be when political campaigners were shouting themselves hoarse in "defense" of their "sacred sub-soil."

It has been said that Argentina, whose people are now predominantly Italian, is in about the same unsettled condition, politically, as was Italy before Mussolini took charge. Unfortunately for a people more amenable to dictatorial than democratic rule, there is no outstanding leader possessing the youth and virility necessary to one who would emulate the redoubtable Benito.

Don Hipolito achieved a reputation as a strong man during his previous administration. Argentine radicals, who have a program of legislative and economic experiments only slightly less than those of the bolsheviki in Russia, looked to him to bring about the mellinnium which their rosy dreams had pictured. His interest in the under-dog is so acute that, in cases of industrial dispute, his sympathies usually are thrown to the strikers, regardless of the merits of their demands. So much so that the radical elements of Argentine political life, led by Senator Molinari, who is said to maintain close contact with Soviet crusaders, came to believe that his election would inaugurate a campaign of legislation designed to bring about the downfall of capital and the glorification of labor. However, the radicals did not receive the full measure of support which they had expected from the chief executive, as Irigoyen, probably fearing international complications, caused the removal of a wild-eyed chief of police at Rosario who made public announcement of his refusal to give police protection to the cars and other properties of a British-owned tram-way company involved in a conflict with striking employees, thus materially checking the impetus of the radical movement scheduled to get under way following his inauguration. Furthermore, the president, whose span of life already exceeds the biblical allotment by more than a decade, has begun to show signs of senility, and it is beginning to dawn upon his supporters that he has no definite program for the achievement of their Eutopian desires.

Don Hipolito's House-Cleaning

When Irigoyen was inaugurated, he announced a governmental house-cleaning intended to "sweep all the crooks out of office"; and, in furtherance of this policy, thousands of governmental employees, subordinates as well as senior officials, were dismissed. Unwilling to trust cabinet members, department heads, and treasury officials, the president insists on giving personal attention to trivial details. It is said that he signs by his own hand all vouchers for the disbursement of public funds; and that, for a period of three months, he could not find time to approve the salary checks of consular and diplomatic officials. Current accounts in favor of local merchants are said to have been allowed to go delinquent to the extent of some eighty million *pesos,* simply because the president did not have time, among the press of details and minor duties, to scrutinize and approve their invoices. A naval contingent sent to England to ac-

Government owned producing properties in

cept delivery of a number of new battle-cruisers became stranded because the one-man government neglected to remit the cost of the ships and forgot to forward money to provide for food and lodging for the men.

This practical paralysis of government, connected with stories of murder and sabotage which have issued from Rosario, where strikes, rapine, and disorder have continued throughout the year, has served to impair the credit of the country to such an extent that even the proponents of the nationalization bill are beginning to realize that it may be difficult to borrow the money with which to expropriate existing rights and properties of foreign oil interests.

Recent modifications of petroleum laws which have been enacted in Roumania and proposed in Colombia, where nationalization of petroleum failed, also have had some influence on popular opinion; and, while American, British and German interests engaged in the Argentine oil industry are by no means safely past the danger of expulsion, that danger is not so imminent as it appeared to be one year ago.

Confiscation Not Contemplated

It is believed that Argentine national pride will forbid the adoption of a policy of confiscation of oil properties similar to that which brought about world-wide criticism of the Mexican government. However, there remains the possibility that, if the scheme of expropriation and indemnification should fail, because of unwillingness on the part of American and British financiers to lend money for the expropriation of American and British rights, foreign oil companies may still be forced to deliver up their properties and going businesses in exchange for long-term bonds or "scrip" of no immediate value.

Petroleum Bill

The petroleum bill which was passed by the chamber of deputies on September 17, 1928, reads in part as follows:

Article 1: All the natural veins, sources, and deposits of petroleum and the gaseous hydrocarbons which may be discovered in the sub-soil or which escape from the surface of the land, as well as the accessories of such mines referred to in article 12 of the mining code, which may have been conceded to private parties by the national state or by the governments of the provinces prior to the enactment of this law are declared to be of public utility, the executive power proceeding with their expropriation in accordance with the legal prescriptions in effect.

Article 2: The executive power is authorized to declare the cancellation of exploration concessions for the substances specified in article 1 of this law, against indemnification.

In accordance with article 39 of the mining code, all cateo permits (exploration concessions), insofar as they refer to exploration for the substances specified in article 1 of this law—the concessionaries of which have not complied with the dispositions of article 28 of the said code—are declared revoked without the right to any indemnification whatever.

Articles 26, 36, and 40 of the mining code, insofar as they are opposed to the free exploration and exploitation of the substances mentioned in article 1 of this law by the national state throughout the territory of the republic, are revoked. The national state, in the exploitation and exploration of such properties, shall enjoy all the rights accorded by the mining code to the holders of the concessions.

Y. P. F. Largest Producer in Argentina

The passage of the nationalization bill, if finally enacted into law will not mark the government's first experience in the oil industry, as it has been engaged through its fiscal agency, *Yacimientos Petroliferos Fiscales,* upon the business of producing, refining and marketing oil for more than 20 years. With an average production of approximately 15,000 barrels per day, chiefly at Comodoro Rivadavia, and with refining capacity slightly in excess of that figure, the Y. P. F. heads the lists of producers and refiners operating in Argentina; but, by reason of the fact that the country is far from self-supporting in the matter of petroleum, the Y. P. F. ranks below the subsidiaries of both the Standard and Shell companies in the retail trade.

General Enrique Mosconi, president and director general of the Y. P. F. organization, has taken the subject of nationalization of South American oil very closely to heart; so much so that he felt called upon recently to make a tour of South American oil producing states, at the expense of the Y. P. F., ostensibly for the purpose of studying conditions, and to exert himself in an effort to foster the nationalization movement, particularly in Venezuela and Colombia. When in Bogota, he was moved to say to the Colombian people that, if they turned their oil resources over to European interests for exploitation, it would be like hanging themselves with a silken rope; on the other hand, to deal with North American companies, would be to hang themselves with a hempen rope; "—as for Argentina, we do not intend to hang ourselves at all; we expect to exploit our own petroleum reserves."

Pending the outcome of the nationalization project, the Argentine oil industry has practically come to a standstill. No leases or concessions have been granted in reserve areas since December, 1924; and activity by foreign companies since that date has been limited to acreage previously acquired.

Government officials have withheld permits solicited by foreign companies for the construction of pipe lines, refineries, and other facilities required for expansion. For example, an application by the *Diadema Argentina,* Shell subsidiary, for permission to construct a refinery at Buenos Aires has not been acted upon, although filed more than a year ago. Presumably, the policy of the government is to refrain from granting permits for the installation of facilities which it would later have to expropriate, in event the nationalization scheme is carried through.

the Commodoro Rivadavia field, Argentina

Paper read before AIME Meeting, Los Angeles, October 4, 1929

Re-Pressuring in Depleted Oil Zones

By C. M. NICKERSON
Petroleum Engineer

It is apparent that re-pressuring of the oil measures is becoming increasingly important to the oil industry, and is a matter that warrants the best efforts of the petroleum engineer charged with applying this modern method of operation to a producing property. Considerable attention has been directed to repressuring in various California oil fields, such as Dominguez and Seal Beach, which have served to sell the more progressive operator on this idea and also to keep him sold. The projects which have received the most attention are located in comparatively young fields where the fluid levels are high, the well, perhaps, still flowing, where the wet gas production is of considerable volume, and where there is vital need of immediate conservation of gas, which otherwise would be blown to the air.

The new California Gas Law, which prohibits the waste of gas, has served to interest the oil industry in means of conserving this gas which is now being blown to the air due to lack of markets. This vitally affects the operator in the older, well-depleted oil fields of the state, because in many cases he has but a very limited market for his gas, due to the flush production from the more active oilfields. While the waste of gas is relatively small in these older fields, such as in the Midway-Sunset area, it now attains considerable importance, since under the new state gas law it must be put to some beneficial use.

Repressuring in the older fields of California has not received the attention of the petroleum engineers which is warranted by the present situation. This paper was prepared with the view of presenting the salient features connected with repressuring in the well-depleted oil measures of the older fields, and to show what results have already been obtained in these fields by injecting the unmarketable gas into the sands, particularly in the Midway-Sunset field in the San Joaquin Valley of California. Other projects in the older fields of the state offer some supporting data in this connection, such as the Shields Canyon and the Brea fields.

In the preparation of this paper the writer acknowledges the kind assistance and helpful cooperation of the various engineers engaged in repressuring programs, especially Mr. A. H. Bell, Mr. V. H. Wilhmelm and Mr. G. I. McBride.

DUE to the lack of market for a large portion of the dry gas produced in certain of the older, well-depleted oil fields of California, the operators are forced to the blow this gas to the air or to put the gas underground for future use. At first this was considered as merely a gas storage proposition in the oil zone, as differentiated from the storage in a dry gas zone. As the volume put underground increased, certain fluctuations in the production of the surrounding wells were noted. Further observations and study led the operators to believe that the gas storage proposition could be more correctly turned a repressuring program. During the last two years these projects have come to be looked on as a repressuring program, although an appreciable proportion of the gas pumped underground could still be considered as stored there for future use.

The lack of necessary records of gas production, gasoline content, etc., for individual wells in these older fields has seriously handicapped the petroleum engineer in studies of the actual results obtained from repressuring where adjoining wells were on production. However, several important facts have been developed which may be useful in future repressuring programs in certain fields in California, where conditions may be comparable to those existing in the Midway-Sunset oil field and in Elk Hills field.

Subsurface Conditions, Depleted Fields

It may be well to set forth the subsurface conditions in a typical well-depleted oil field of California, in order to explain better the results obtained by repressuring these oil zones. The Buena Vista Hills anticline is an integral portion of the more extensive Midway-Sunset monocline, located in the San Joaquin Valley. The oil measures vary from approximately 600 feet in thickness on the top of the structure to less than 100 feet on the northwest flank. On several of the leases here where injection is under way the average thickness of the sands is about 200 to 300 feet. The oil zone consists of alternating strata of pulverent, poorly cemented oil sand, and sandy shales, interstratified in a predominately shale body. The fluid levels in the field are comparatively low, being in the majority of cases less than 500 feet above the top of the perforations in the oil string. The wells vary from 3000 to 4000 feet in depth. The well-depleted character of the oil measures in the Buena Vista Hills is shown by a production, to date, of 32,000 barrels per acre, which represents approximately 75 per cent of the estimated ultimate yield. Considering the low fluid levels and the present production per well of 20 to 80 barrels per day, it is safe to assume that the upper portion of the oil zone is very well depleted of its oil content, and that considerable open spaces may be found which offer little resistance to the passage of gas from one location to another. The production of wet gas and natural-gas gasoline is still of considerable volume, since the field is not in the last stages of depletion.

Injection Pressures and Volumes

The pressure under which the gas was injected in Buena Vista Hills was found to be less than 200 pounds in most cases, and that at least 300,000 cubic feet could be injected daily into an individual well. The source of the dry gas was the gasoline compressor and absorption plants on the lease, which normally discharge the gas to the sales line at 300 pounds pressure. On certain of the leases where only 80 pounds pressure was available, additional compressors, or high-compression cylinders, were utilized to obtain the required pressure. Figures 1 and 2 show the average daily volumes and injection pressures for typical repressuring programs in the well-depleted field, the adjoining wells being on production. These curves show that the injection pressure remained practically constant for a widely varying volume of gas. However, if sufficient volume were injected the pressure required would be increased somewhat. These figures are for leases that are not appreciably affected by encroaching edgewater. Due to the experimental character of the various programs studied by the writer, complete data was not always available, but an attempt was made to determine the ratio between injection pressure and volume with no success. As these projects are continued, further information may be obtained which will permit the determination of the maximum

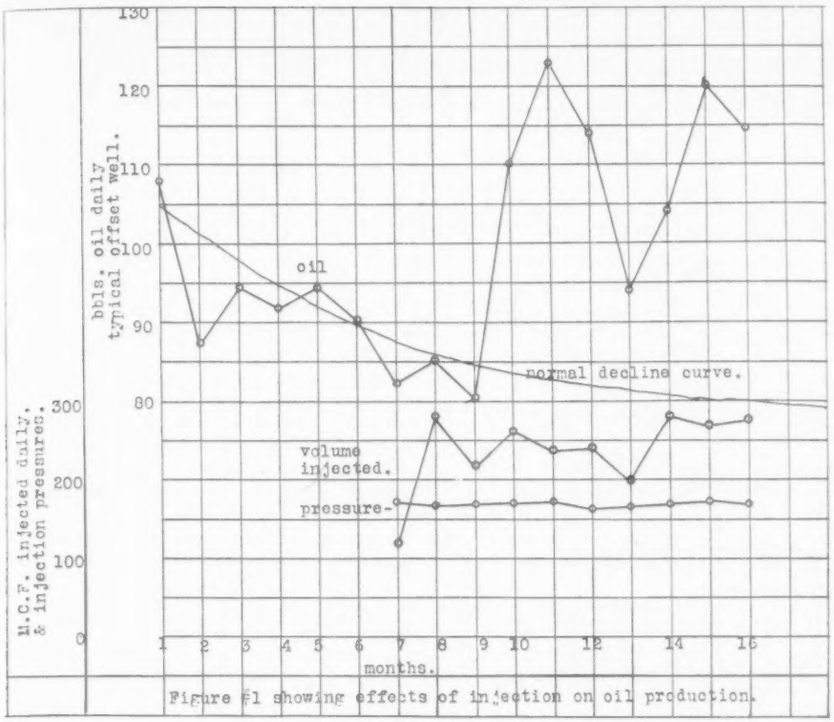


FIGURE 1—*Showing effects of injection on oil production*

volume of gas which may be forced into the oil zone at a given pressure. None of the operators has found it necessary to inject all of the available gas into one well in order to determine the injection pressure changes, since there are sufficient wells available for injection purposes on the several leases.

No elaborate plants or hook-ups have been installed for repressuring purposes. The dry gas from the discharge meter of the compressor plants was piped through available lines to the key well. Often the available lines were not of the most economical size nor in the place desired. The best use possible was made of existing facilities on the lease. Pressure loss in the gas lines and leaks were taken for granted. The gas was available at a given pressure at the plant and whatever could be put underground was that much less that would blow to the air. More efficient installations will be found in the future as repressuring of these depleted fields becomes the common practice.

Choice of Key Wells

The wells selected for injection purposes have not always been in the best mechanical condition nor at the best structural location. The key well should generally be selected as low down on the structure as the boundaries of the lease will permit. The location should be as far removed from the borders of the lease as is feasible in order to confine the benefits of the repressuring to the one lease, unless cooperation is obtained from the neighboring operator. Often in the older fields, it has been found advisable to utilize a well in bad mechanical condition for injection purposes that was about to be abandoned. If the well will not produce any oil, but will receive gas into the oil zone, it becomes a source of profit instead of an added expense, since the removal from production of another well is eliminated.

The key well should be cleaned out to bottom to facilitate injection and the connections made to the casinghead in order to pump the gas into the oil zone. Sometimes it was found necessary to utilize the tubing in the well to gas-lift the oil from the hole until the fluid level had been lowered sufficiently to allow the gas to enter the formation under the available pressure. During the cleaning out of the well the fluid might be lowered to the desired level. The comparatively low fluid levels in the more depleted fields offer but little difficulty to the passage of the gas into the formation.

Results Obtained

Figure 1 shows a typical injection project, giving the injection pressure of between 160 and 175 pounds, a daily average injection volume ranging from 200,000 cubic feet to 280,000 cubic feet for the individual well, and the average daily production of oil from an offsetting well. Within a month or two after injection was started beneficial results were noted on the daily oil production of wells in the vicinity of the key well. The oil production of the typical well was greatly increased, and as the injected volume of gas was decreased each month, the oil production declined also. With an increase of 30 per cent in the injected volume of gas the daily average barrels of oil increased almost to the former peak, as shown on Figure 1. Not all of the wells were so favorably affected by the injection program but no well in the vicinity of the key well appears to have been adversely affected. There is every reason to believe that the decline curve of the well illustrated in Figure 1 will meet the former estimated decline curve many months in the future, the difference between the estimated curve and the actual curve following injection representing the increased volume of oil obtained by repressuring on the lease.

Somewhat similar results are shown on Figure 2, which pictures conditions on a lease in the Buena Vista Hills. The injection pressure remained constant at 160 pounds, while during the period of a year the volume of gas injected increased from 125,000 cubic feet daily average per month to 225,000 cubic feet and then decreased to 130,000 cubic feet daily. Data from the offsetting wells, as illustrated by the curves on this figure, show that the de-

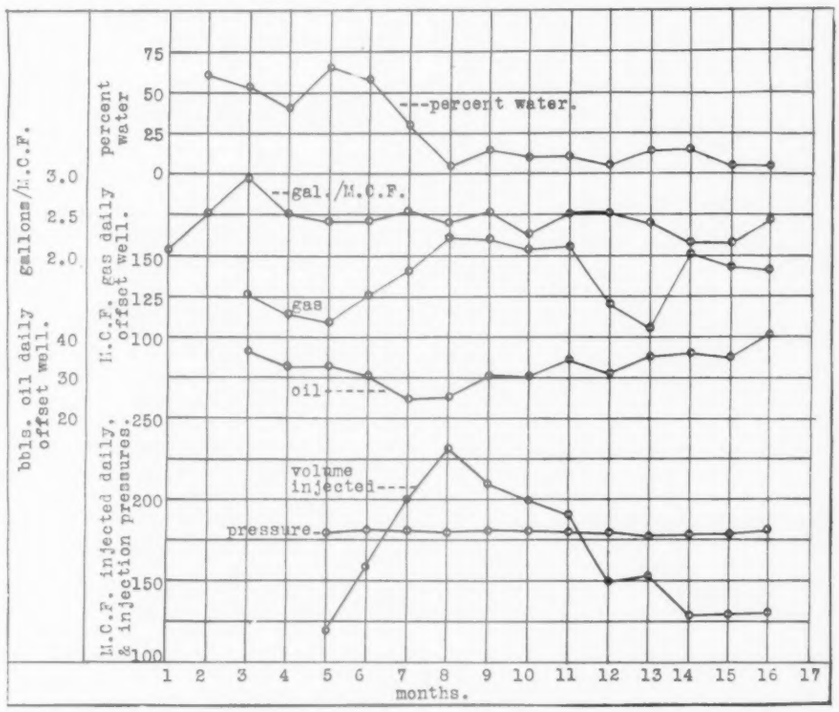


FIGURE 2—*Showing production data of typical wells offsetting injection well*

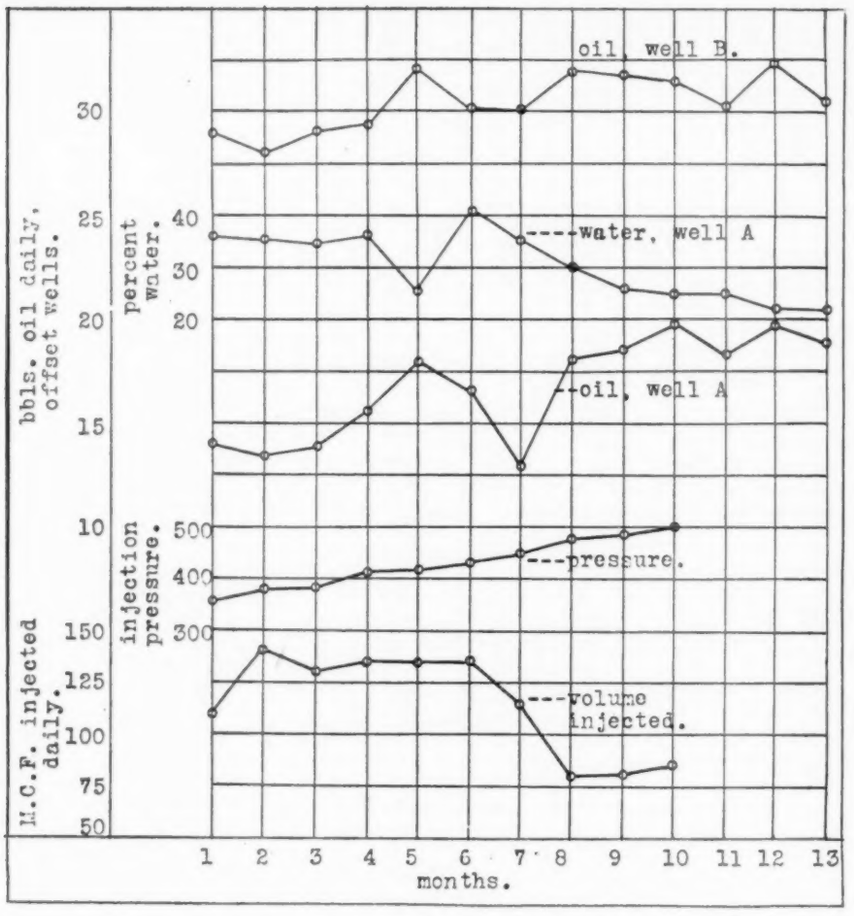


FIGURE 3—*Injection data for edgewater area*

cline curve for daily barrels of oil turned upward within a few months after injection was undertaken, and had not reached its peak after a period of nine months. The ultimate recovery of oil from the offsetting well has been greatly increased due to repressuring. Shortly after the program was initiated on this lease the gas production of certain offsetting wells increased about 50 per cent, showing that the injected gas was reaching the well, probably by-passing the oil somewhat. Little attempt was made to control the migration of the gas by use of back-pressure on the offsetting wells, although this is feasible in most cases. The gasoline content of the wet gas from the offsetting wells showed a rather steady decline in the gallonage per M.C.F. curve. This may be interpreted as indicating that the dry gas was reaching the well and diluting the wet gas ordinarily produced, without picking up any appreciable amount of the lighter hydrocarbons in the crude oil. However, the large increase in wet gas produced more than offset the drop in the gallonage per M.C.F., resulting in a larger volume of natural-gas gasoline being produced from the well. Another beneficial result which may be attributed to re-pressuring is the decrease in some cases in the percentage of water produced by the offsetting wells, resulting in lowered lifting costs and larger ultimate recoveries. Figure 2 illustrates a drop in the volume of water produced from more than 50 per cent to about 10 per cent of the fluid produced. The oil curve turned upward at the time the water percentage curve reached 10 per cent, indicating, perhaps, that the water formerly produced was holding back or entrapping certain volumes of oil. The lease whose production curves are illustrated on Figure 2 is not located within the edgewater line, but does produce considerable water let into the oil zone by faulty shut-offs, etc. The decrease in the water cut may be attributed to the pressure of the injected gas flattening the water cone, or to actually preventing the infiltration of the water into the oil zone.

Notes On Shields Canyon

In the Shields Canyon field; 200,000 cubic feet per day per well has been injected into the shallow zone at approximately 230 pounds pressure. The offsetting wells were producing between three and five barrels of oil per day. After 18 months of intermittent re-pressuring the oil production from the majority of the wells had been very materially increased, while the key wells after being returned to production had a daily yield greater than at the date they were taken off production for injection purposes.

Injection In Edgewater Area

If a lease is located within the edgewater line on the borders of a field and re-pressuring is undertaken, a somewhat different set of conditions is encountered. Bottom water may have encroached to a point higher on the structure than the injection well. Fluid levels may be considerably higher than on a lease located well up on the structure. The percentage of water produced from such a well is usually rather high. Injection has been undertaken on a small lease on the edge of the Elk Hills oilfield where the above conditions obtain. The curves for this lease are illustrated on Figure 3. Here the injection pressure required was considerably higher than in the well-depleted oil zones where edgewater was not a major consideration. An initial pressure of 360 pounds was required which increased steadily over a period of 10 months of 500 pounds. The volume of gas injected was approximately 135,000 cubic feet per day for this time. For the last few months the volume injected was decreased to 60,000 cubic feet per day, resulting in a very slight flattening of the pressure curve. The daily average oil production of certain of the offsetting wells showed a considerable increase over a period of a year. The percentage of water produced by one well decreased from 40 per cent to 20 per cent, with varying decreased water cuts on several of the remaining wells in the vicinity.

Conclusions

On the basis of past experience in re-pressuring in the depleted oil zones of the older fields of California, it may be safely concluded that the injection of gas into such a zone will result in considerable benefit to the operator, such as increased oil recovery, a slower rate of decline of the well, and an increased volume of natural-gas gasoline. A few years ago it was generally held that re-pressuring could not be undertaken on any except comparatively large leases of two or three sections in area. Recent developments have shown that this production method will be successful on leases as small as a quarter section. Full benefit of the process cannot be obtained on so small a lease as would be the case if a larger area were under the control of a single operator, due to the tendency of the effects of the increased formation pressure to travel across the property line.

Confining of the effects of the re-pressuring program to the area of the lease may be obtained by maintaining high fluid levels on the line wells and using a center well for injection purposes, at the same time producing the intermediate wells at a rapid rate under a relatively low back-pressure. This will result in some by-passing of the gas, which would probably occur anyway in the partially-drained oil zone, in the obtaining of the increased oil recovery due to the gas-drive effect from intermediate wells, and in some decrease in the water production of the lease.

Another method of obtaining full benefits from a re-pressuring program on a comparatively small lease involves holding back-pressure on the wells adjacent to the key wells, thus forcing the gas to travel a greater distance away from the injection well, and producing the line wells at maximum capacity under a comparatively low back-pressure. By this means the gas injected is forced to do the maximum amount of work, considering the limits of the lease, the increased oil

(Continued on page 48)

Long Beach Stability *an* Incentive *to* Curtailment

By H. J. STRUTH
Staff Economist

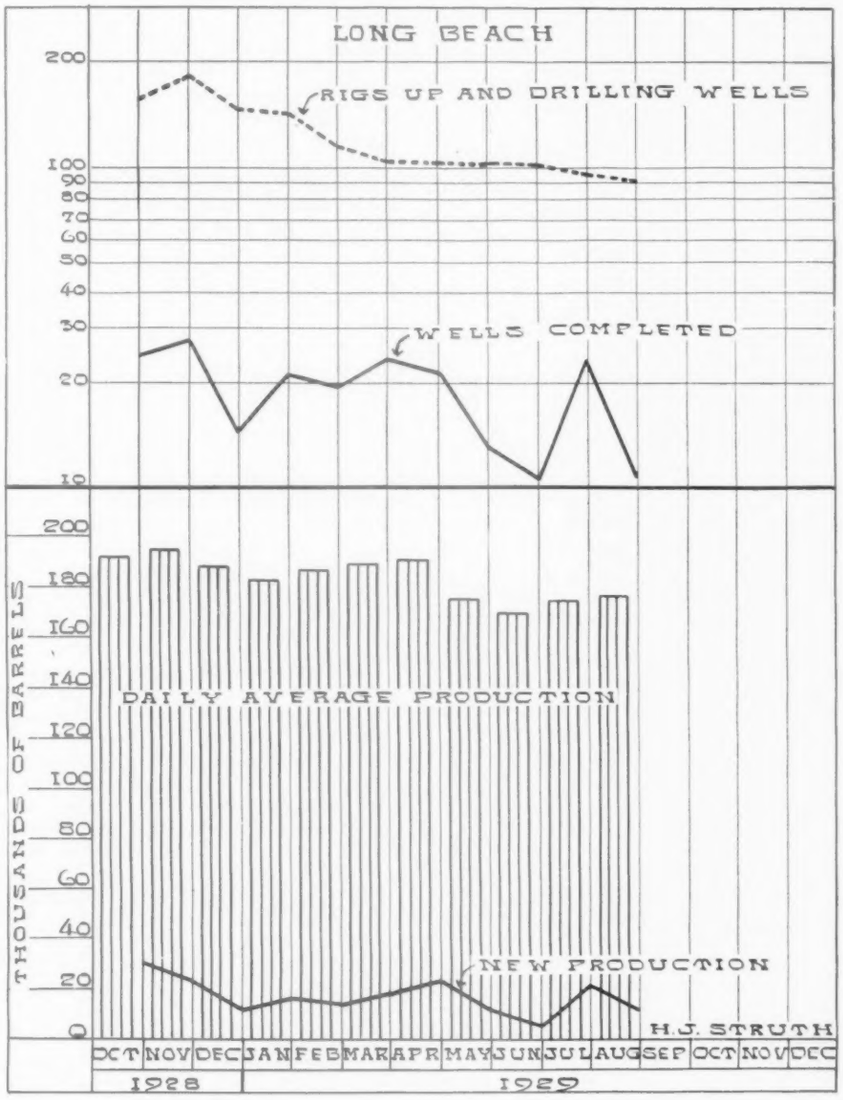
REVIVAL of talk concerning voluntary curtailment of excessive oil production in California, prompts further consideration of the possibility of reducing production at Long Beach. Unlike Santa Fe Springs, Long Beach presents no premature development problem to seriously interfere with cooperative curtailment effort. From a standpoint of gas waste, the Long Beach area is charged with wasting 151,500,000 cubic feet daily, or about one-third of the total being wasted at Santa Fe Springs. The fact that a majority of the operators there are agreeable to a gas-oil ratio of 3500 cubic feet of gas to one barrel of oil, makes it apparent that even though this ratio has not been sanctioned by the state of California its immediate adoption would result in curtailing production to the extent of at least 43,000 barrels of oil daily. This would bring the daily output of the Long Beach area down to about 130,000 barrels and practically eliminate the waste of gas.

Conditions Ideal for Conservation

To accomplish much needed curtailment at Long Beach has appeared a difficult matter, when, in reality, conditions are ideal for the immediate inauguration of cooperative control. In its concentrated state, this field offers an incentive to operators not only to clear themselves of the allegation that they are wasting natural gas, but also to pave the way to a better understanding of economic principles as an effective means of maintaining at least a fair degree of equilibrium between supply and demand. Since Shell Oil Company, Richfield Oil Company, The Texas Company, General Petroleum Corporation, Sunset-Pacific Oil Company, Union Oil Company and Pan-American Petroleum Company, in the order named, control practically half of the production of this field, it would appear that these companies are in a position to obtain consent of all concerned to prorate the output of the field on the basis of, say, 130,000 barrels daily. An additional favorable factor is the unusual stability of this field, making it possible to produce a given quantity of oil without extreme variations. In fact, subsurface conditions in the Long Beach area are in some ways comparable with the Yates pool in Pecos County, Texas. As in the case of the latter area, production in the Long Beach field can be maintained at a more or less constant level, without resorting to continued drilling of new wells. Under these conditions, it should not be difficult to effect an equitable agreement among a majority of the operators that would readily attain desired results.

Wells Noted for Consistency

The stability of production at Long Beach is demonstrated in the accompanying chart, which shows that although there has been comparatively little drilling in this field during the past year, the rate of prdouction has shown only slight variation. Although Long Beach and Santa Fe Springs are only a few miles apart, conditions in each are vastly different. Where the more shallow formations of Santa Fe Springs are showing a rapid decline, the present producing horizon of Long Beach appears to exhibit indications of producing at a high rate for a much longer period. The thickness of the sand at Long Beach, accompanied by unlimited gas pressure, is conducive to long-lived wells, with comparatively slow decline. This is surprising, in view of the density of producing wells. In this respect, the field very much resembles Santa Fe Springs. It will be noted on the chart that the total



of new rigs and drilling wells has shown a steady decline since last October, while the trend of both completions and new production has been downward. Such a condition at Santa Fe Springs would have resulted in a precipitous decline in production, that would probably have placed the entire state's production below actual requirements.

Oil Reserve Lies in Deeper Known Sands

Investigation of sub-surface conditions at Long Beach discloses that the present producing formation has been practically drilled to the limit of its well defined surface area. While numerous test well have been drilled completely around the outskirts of this area, in an effort to locate an extension, these tests have only proven conclusively that the present horizon is closely limited to the area that is literally covered with rigs of producing wells. Drilling has been limited in this field because the surface area is limited to a given number of drilling sites. However, this does not indicate that the Long Beach field will eventually pass out of the picture; in fact, any future sign of a decline will not doubt be readily offset by redrilling existing wells down to deeper formations that are known to underlie this area. The Nesa 11, being drilled by the Shell Oil Company, at Signal Hill, is an example of what may transpire in the way of deep drilling when the present horizon gives indications of a prospective decline. How much oil is available from the deep sands of Long Beach is problematical, but leading authorities on sub-surface geology of this area are confident that the future will witness a deep producing zone of at least as great, if not greater, proportions as the present zone.

Long Beach Could Take Initiative

A visit to Long Beach and other prolific oil producing areas of California cannot fail to impress one with the fact that this state possesses enormous potential supplies of oil. The fact that wells producing oil from the present zones have maintained a steady production curve, in the face of increasing offsets, presents some idea of the enormous gas pressure that accompanies production there. Many of the wells now producing in this area have maintained a steady flow of oil. This has prevented operators from determining the possibilities of deeper structures. As long as production of this field holds up, there is little likelihood of an extensive deep drilling campaign there. In the meanwhile, gas is being wasted in enormous quantities, while excessive oil production is becoming more and more a menace to the California crude market. That something must be done is a foregone conclusion — that something can be done is apparent from the situation outlined — that something will be done, depends upon whether the operators themselves will voluntarily abide by economic laws, or be forced to abide by the terms of the state gas saving law.

Repressuring in Depleted Oil Zones

(Continued from page 46)

recovery is obtained from the line wells; the circulated gas will have a higher gasoline content as it travels further through the oil zone, and in general a larger area of the lease is re-pressured with only a small chance of the oil being forced off the lease to the wells of a competing neighbor.

In the event of whole-hearted cooperation by neighboring operators even more beneficial results may be obtained by a repressuring program. If adjoining operators can agree, the key wells may be located as direct offsets across the section line, with equal volumes of gas injected into each well, thus permitting full benefits of the program to be obtained by each operator, since he does not feel that he is merely forcing a portion of his own oil into the neighbor's wells. The distance that the gas may be forced to travel by this method will be nearly doubled. The producing wells adjoining the injection well can have their back-pressure increased without diminishing the oil production to any material extent, the gas forced to the next location, and the operation repeated, until the effects are noted on wells near the opposite section line. When this occurs the line wells should be operated at full capacity in order to make sure that the oil stays on the proper lease. The re-circulated gas will have a higher gasoline content, due to the increased distance it is forced to travel, thus tending to reduce the extraction cost of the gasoline.

The reduction of the water production of the lease will tend to lower the lifting costs, and will normally be accompanied by an increase in oil production. On many of the older leases in California a large portion of the water produced with the oil may not be edgewater, but water let into the formation by faulty drilling, leaking shutoffs, bad casing in suspended producers, etc. Some of the results obtained on various leases indicated that the injection of gas tends to hold back this type of water and to permit certain volumes of oil formerly trapped by the infiltrating water to be produced, thus increasing the ultimate recovery of oil. While unit operation of a structure may be the ideal method of obtaining the maximum volume of oil from each property, the lack of 100 per cent agreement should not prevent all attempts to utilize the excess dry gas.

The market demand for dry gas in California fluctuates several hundred per cent over the year, while the daily and weekly demand for gas shows marked changes. The supply of dry gas from the gasoline compressor plants is constant, and cannot be regulated according to the market demand. An operator faced with a limited market for his gas should be able to inject the excess over sales requirements into key wells on even a comparatively small lease, varying the injected volume on a daily, weekly and seasonal schedule. By this method he can sell all the gas which is needed for domestic and industrial uses, the excess being injected into the oil zone in varying amounts, and the effects will continue to some extent after injection has ceased temporarily. On several of the projects in the state, injection was stopped and the beneficial effects noted on wells in the vicinity for several months afterwards. Over the week-ends there is a decreased demand for gas for use as fuel in the industrial centers, while during the summer months the domestic demand shrinks to a comparatively small figure. There appears to be no good reason why intermittent injection of gas could not be adapted to the fluctuation of the demand. Some operators believe that a constant volume of gas should be injected into a well each day and each month, but the writer sees no real reason for this procedure.

Some companies use the dry gas zone to store gas which cannot be used at the moment, withdrawing the gas for use at the first opportunity. Storage of gas in a dry gas zone is not the subject of this paper and need not be considered here, but is a parallel procedure for injection in varying amounts into the oil zone, where it may be considered as re-pressuring or as gas storage. A well so used for injection into the oil zone should not be considered as a gas storage well, since the re-producing of the gas from the same well with adjoining wells on production would nullify certain of the benefits to be expected by allowing the gas to travel to adjoining wells and be produced there.

If a lease is entirely shut-in and no wells are on production, surprisingly large volumes of gas may be injected into the oil zone and stored there. The casing-head pressures on wells in the vicinity should be recorded frequently in order to determine the extent of the migration of the gas and to prevent a blow-out. Ultimately, a high pressure will be built up over the area of the lease. If any wells outside of the shut-in limits are producing, they should be carefully gaged and any undue changes in production analyzed. This may permit of a modification of the back-pressures on certain of the shut-in wells so as to minimize the driving of any oil off the lease.

Summary

1. The re-pressuring of a depleted lease producing as little as three to five barrels of oil per well per day is feasible.

2. Gas may be injected into a lease as small as a quarter section and the benefits therefrom confined to the property.

3. The volumes and injection pressures necessary in the depleted field are within reach of the usual compressor capacities found in the natural-gas gasoline plant on the lease.

4. Intermittent injection of gas will eliminate the necessity of blowing the excess gas to the air, and will bring the supply more in line with the widely fluctuating market demands.

5. The benefits of re-pressuring a well-depleted lease include: An increase in the oil production of the offsetting wells, a decrease in the water production, resulting in lessened lifting costs; an increase in the volume of wet gas produced by the wells; and an increase in the total gallons of gasoline obtained from the wet gas.

6. When the injection well is returned to production the barrels of oil per day will ordinarily be found to have increased over that prior to the injection of the gas.

Modern Field Equipment Display

INTERNATIONAL PETROLEUM EXPOSITION

Tulsa, Oklahoma, October 5 to 12, 1929

Hercules Motors Corporation

ENGINES

Extreme ruggedness, combined with utmost simplicity, features the power units and engines displayed by the Hercules Motors Corporation, of Canton, Ohio.

Covering a wide horsepower range, Hercules engines and power units are designed for complete adaptability to the various oil field uses.

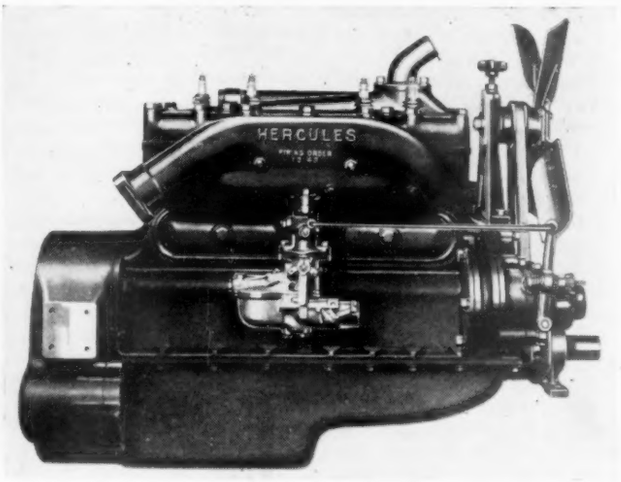
Hercules engines and power units equipped for operation either on gasoline, kerosene, natural gas or distillate, are operating with extraordinary success on compressors, cable tool-drilling units, oil, mud and water pumps and gas-electric power plants.

Special attention is directed in Hercules engines and power units to the demands of sustained heavy-duty operation. The bearing areas are unusually large and the bearing pressure correspondingly low.

Positive lubrication is had by a forced feed oiling system to all bearing points from a gear driven oil pump located below the oil level. The extra capacity cooling system with water jacketing the entire length of the cylinder barrels, and designed in such a manner as to direct a stream of water around each exhaust valve, and water pump capable of an unusually high lift, insures proper engine cooling under the most extreme operating conditions.

The feature of the display is the "TXO" oil field power unit. This includes the standard "TXO" four-cylinder engine, especially equipped for oil field purposes. It is an unenclosed unit with a heavy-duty extra capacity radiator securely placed in position; a combination carburetor and gas valve permitting a change while running to either gas or kerosene; a magneto that is water and dust proof; and the spark plugs insulated to guard against explosions or fire. It is equipped with a full Timken bearing clutch power takeoff, with exceptionally heavy shaft and plates designed especially for oil field service.

Other Hercules displays are the "OOC" four-cylinder and "YXC" six-cylinder power units; the "OX" engine arranged for replacement for the power plant in Fordson tractors; the "OX" power unit with clutch power takeoff assembly; the model "G" power unit with reduction gears; and the "TXO" power units with reduction gears.



Hercules "OO," Manifold side

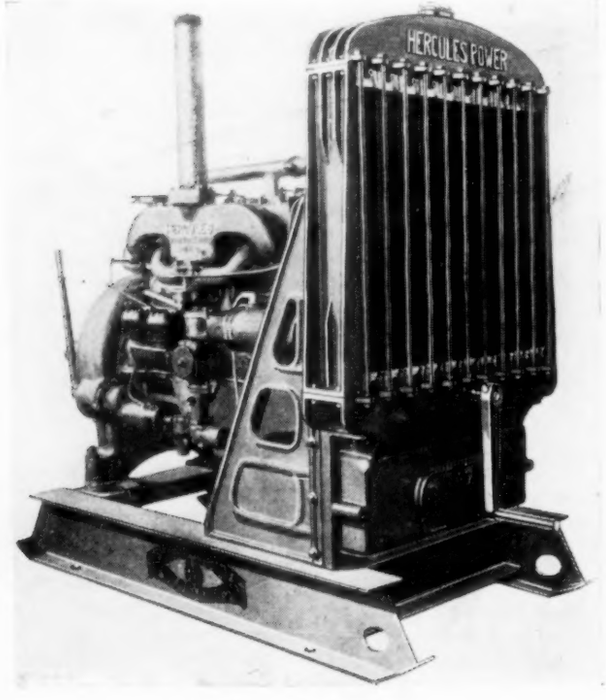
Models representing the "OO," "YX" and "WX" series heavy-duty four and six-cylinder engines are included in the exhibit, as well as the "TX" series engine with foot type bell-housing, and a complete display of various engine parts.

Burdick Enamel Sign Company

PORCELAIN ENAMEL SIGNS

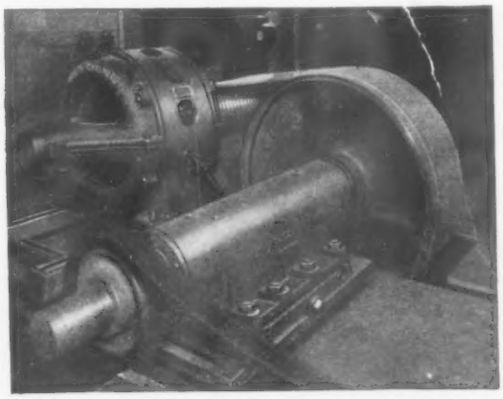
The Burdick Enamel Sign Company is showing the illuminated semaphore type filling station sign, along with several styles of sidewalk or curb signs, and also a variety of porcelain enamel pump signs and other suitable signs for oil companies.

. Vitreous porcelain enameled steel in true colors for beautifying stations and station attractions, as signs, is being displayed. The signs are made to last against peeling, cracking or checking. Many styles are offered by the company, and varieties now in use are displayed as examples of the work done by the company.



Hercules "TXO"

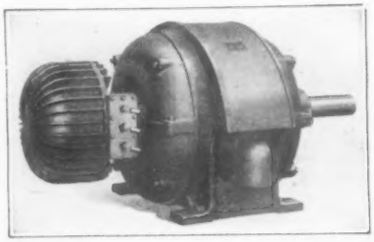
Hercules "TX"



Allis-Chalmers Manufacturing Company

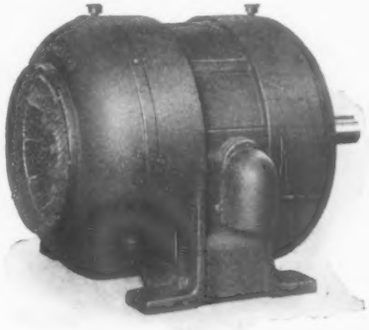
Allis-Chalmers Manufacturing Company is featuring a texrope driven single reduction unit for drilling and pumping, a two-speed double rated oil well motor and control. The new Allis-Chalmers totally enclosed fan-cooled motor

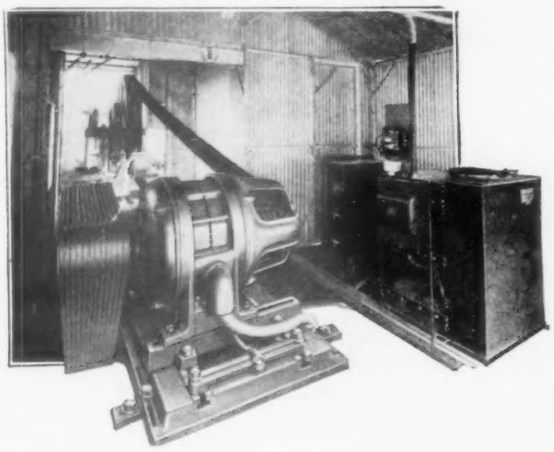
that can be installed outdoors without any other protection from the weather, together with the weather proof push-button starter, and the small, compact "SSU" centrifugal pumping unit. These pumps are used as pick-up pumps in



the field for supplying service water and for handling drainage and cooling water.

In connection with the exhibit of the International Der-





rick & Equipment Company, Allis-Chalmers Manufacturing Company is showing the following equipment, all of which is illustrated here:

A Texrope driven single reduction unit arranged for rotary drilling.

A 150 horsepower rotary drilling motor with enclosed slip rings and drip and splash proof cover.

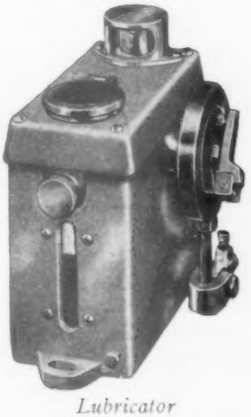
30 horsepower totally enclosed fan-cooled motor driving a gear unit for pumping and drilling and installed in the open without covering to protect it from the weather.

Eclipse Lubricator Company, Inc.

LUBRICATORS

The Eclipse Lubricator Company's lubricator is so constructed that any part, except the driving shaft and reservoir, is interchangeable from one size lubricator to another. With this lubricator the driving shaft is merely lifted out and reversed to change from a left hand to a right hand drive, or vice versa.

Simplicity is shown in that after removing the reservoir cover by loosening of four screws, the driving shaft can be removed by loosening of two lock-nuts, one at each end of the shaft. The mechanism if the driving shaft may be removed without use of tools.



Lubricator

After removing the driving shaft, any pumping unit may be removed by the loosening of two lock nuts, one at each end of the unit, and the pumping unit can then be interchanged from one size reservoir to another for operation.

The lubricators are made for either ratchet, belt or motor drive and made in sizes from one to 20 feed with reservoirs divided into as many compartments as desired.

Medart Company

COUNTERSHAFT

The Medart Company, St. Louis, is featuring its Timken-equipped oil well countershaft.

This adjustable countershaft, used for drilling and pumping, is designed to withstand the heavy, constant service required by modern oil field practice, and to require the least amount of attention and maintenance.

It is Timken bearing equipped, of 30 per cent. greater capacity than ordinarily used, with the bearings completely enclosed in barrel housing, one in each end, both ends of the barrel being grooved according to accepted practice to act as grease seals. It has felt inserts with adjustable plates provided to prevent the entrance of grit into the bearings.

The base has planed grooved ways, or sliding surfaces, to engage and keep in positive alignment the sliding or housing base. The housing base, in one piece, carrying shaft, bearings and pulleys, is bored in one operation and has a travel of 12 inches on the base by means of an adjusting screw. After adjustment is made the sliding base is "set" with hold-down bolts so as not to become misaligned and bind, due to unequal belt tensions. The adjusting screw is to permit easy take-up or belt adjustment.

Sullivan Machinery Company

CORE DRILL MACHINES

The Sullivan Machinery Company and George E. Failing, Oklahoma and Kansas agent for Sullivan core drills, are conducting a joint exhibit featuring the Sullivan drills.

This machine is mounted on a portable truck and equipped with direct connected gasoline pump and hoist.

The "Type 21" structure testing core drill is a new oil field rig, recently developed to meet the requirements of structure mapping work in which the depth required does not exceed 300 to 500 feet. "Type 21" will handle "N" fittings, making a 2 13/16-inch hole, and removing two-inch core to a depth of 300 feet; or "B" fittings making a 2 1/16-inch hole, and removing 1⅛-inch core to a depth of 500 feet. It is equipped with twin-cylinder hydraulic swivel head, giving extremely sensitive control of the bits, and is adapted for use with any of the various types of core barrels designed by Sullivan engineers, for use in either hard or soft formation.

The "Type 21" rig is powered by a 12-horsepower four-cylinder gasoline engine, and the pump supplied is a 3 x 4-inch duplex with mud valves. Drill, pump and engine are mounted on steel frame and skid for convenience in handling. The complete rig is hauled on its skid, as on a sled, or is mounted on a truck body for rapid handling. "Type 21" rig complete weighs 2600 pounds and is seven feet 10 inches long, by four feet wide. The hoisting drum is newly designed for this machine, and is equipped with two speeds. Two speeds are also provided for rotating the drill rods.

"TYPE 40" MOUNTED DIAMOND DRILL

"Type 40" diamond drill, which is driven by direct connected gasoline engine, is mounted complete with power plant and hoist, on a substantial steel frame, carried on a heavy steel wheel truck for convenience in moving. The "Type 40" machine will drill to a depth of 1200 feet with size "N" fittings, making a three-inch hole and removing a two-inch core, and to a depth of 2200 feet with size "A" fittings, removing a core 1⅛-inches in diameter.

"Type 40" drill was developed primarily for structure drilling to greater depths than the "Type 21" and provides maximum portability and fuel economy. It embodies many new features developed in recent years in core drill practice in the oil field, and is intended to replace the popular Class CN structure drill.

The new single hydraulic feed cylinder has a piston travel of 18 inches. For rapid fishtailing, "Type 40" can be equipped with a kelly or grief stem of either 12 or 22-foot length. A special chuck containing the kelly bushing is furnished. In starting a hole when it is desired to exert pressure on the bit with the hydraulic cylinder, the valves of the chuck are tightened on the kelly. When the weight of the rod in the hole is sufficient to furnish proper pressure on the bit, the chuck jaws are loosened. The kelly bushing rotates the kelly and the drilling string is fed off the brake.

A new type of hoist has been built for this machine, set transversely with the rig so that the rope will spool on the drum. There are four hoisting speeds and four rotating speeds, which give a range for any conditions of work. A cathead, also having four speeds, is also provided.

The construction of the hoist is such that the drilling string may be spudded up and down without interrupting rotation, providing complete flexibility and rapid speed of handling.

"BRAVO-300"

For very shallow structure work, the "Bravo-300" diamond drill is built to take cores 15/16-inch in diameter up to 300 feet, or 1⅛-inch cores to a somewhat shallower depth. The rig is supplied with power from a six horsepower water cooled gasoline engine which is mounted on a separate frame and which drives the drill by belt. A pump of suitable capacity is mounted on the engine frame.

Camp-Morgan Company

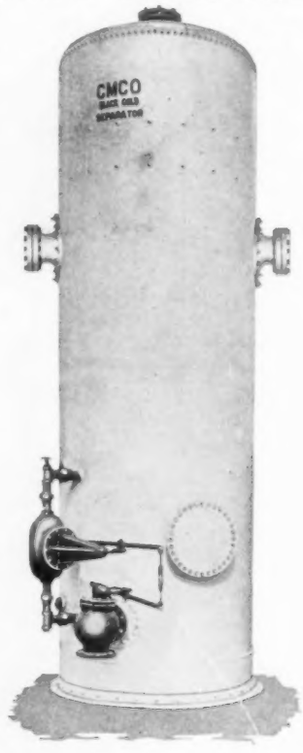
SEPARATOR

The CMCO oil and gas separator, trade-named Black Gold separator, is being displayed by the Camp-Morgan Company of Tulsa.

Standard stock separators are manufactured for pressure requirements from atmosphere to 100 pounds and the Black Gold separator may be built to meet any pressure requirements of the purchaser. Choice of either inside or outside control may be had.

All CMCO separators are equipped with the Tulsa type mist extractor for removing liquid particles from suspension in circulating gas without undue pressure drop. This principle insures bone-dry gas with but slight pressure drop.

Taylor forged steel boiler nozzles are used on inlets and outlets of the CMCO separator and Neilan-Schumacher rotary ball-bearing valves and float cages are standard equipment on the separator.



Separator

Bullard-Davis, Inc.

SAFETY EQUIPMENT

Bullard-Davis, Inc., is showing and demonstrating a complete line of safety equipment which is used in the oil field.

The UCC combustible gas indicator has been developed by the laboratories of the Union Carbide & Carbon Corporation, and is now being used for testing tanks, tankers and pipe lines for gas leaks.

This indicator is portable, light and is designed to give immediate readings of the percentage of combustible gas in a given tank. If the gas contained is known, the reading from the chart, which is supplied with the equipment, will give the percentage of gas contained in that tank. If the gas is not known, then the machine's work is to give the percentage of explosibility contained therein.

The Everyready safety flashlight, for use wherever there are combustible gases present, is being shown.

Davis unit type of first aid equipment, including the Davis gas masks, both small canister, large gaugers' canister mask, and the air line type of gas mask, are on exhibit. Also the Davis inhalator, for use in resuscitation, is being shown.

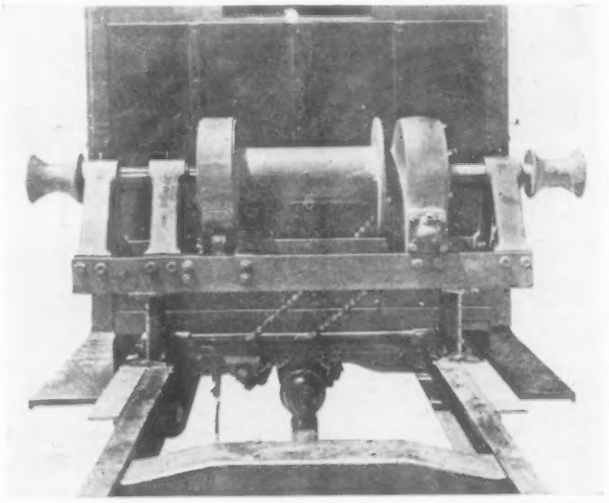
A complete showing of the Willson goggles for chipping, grinding and welding and cutting work is being made. Hard boiled hats for head protection are also in the exhibit.

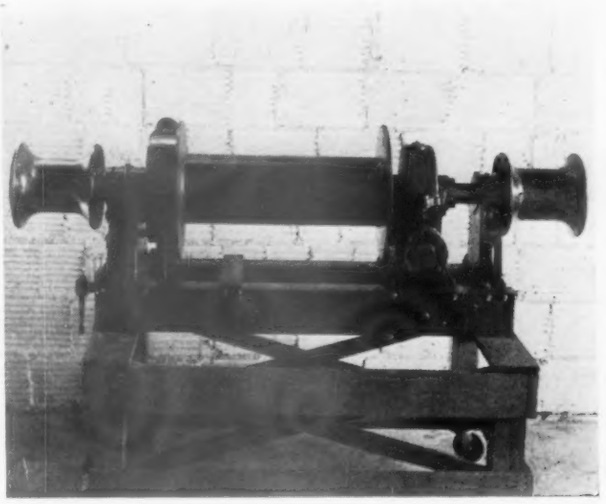
Leland Equipment Company

THE LEECO WINCH

The Leeco winch, shown by the Leland Equipment Company, was introduced to the market recently for the medium weight truck field, one and one-half and two-ton trucks. The heavy alloy steel drum shaft operates on three "A" braces with high speed bronze bearings and through a gear housing equipped with roller bearings. Timken and Hyatt bearings are on the worm gear drive to eliminate heating. Pressure lubrication is provided for at all bearing points and the gears run in a bath of oil. The niggerheads are extended beyond the cab.

Bearing hangers and self-aligning SKF Bearings are used for the drive shaft. A heavy dpty SAE power take-off provides two speeds forward and one reverse. Cab levers control every operation. The jaw clutch extended niggerheads and drum brakes give the operator means of





handling every service. The winch is guaranteed up to the breaking strength of a half-inch wire line.

Silent hoist winches are being shown for the first time at the exposition by the Leland Equipment Company. They offer such features as the non-reversible, self-locking, worm gear drive. The worm gear is of chrome-nickel steel with threads ground after hardening. The worm is carried on ball-bearings which support the load and absorb all end thrust. The worm gear is phosphor-bronze with cut teeth.

The structural members of the silent winch are all electric steel castings.

The two sizes that have been selected for exhibition are a 12,000 pound straight line pull jaw clutch body winch and another that is limited only by the power developed by modern truck motor.

Magneto Ignition Corporation

MAGNETOS

The Magneto Ignition Corporation, Tulsa, is showing a complete line of K-W magnetos, Eisemann magnetos, American Bosch magnetos, Splitdorf magnetos—for truck, tractor and stationary gas engines. Also Scintilla aircraft magnetos are on display in this exhibit.

An added display of this company is the exhibition of many popular makes gas engine type spark plug, as the Stitt, Splitdorf, Mosler Spitfire, Rajah, Fyrac, Bosch, and B-G aviation spark plugs.

Magneto Ignition Corporation is also showing a complete electrical test bench, for testing all electrical apparatus, starters, generators and magnetos. Another interesting display in this exhibit is the United States Electrical Company's portable electric tools.

Blaw-Knox Company

TRACYFIER

The Blaw-Knox Company, Pittsburgh, is showing a working exhibit of its pipe line tracyfier, an apparatus for removing all drops and mist from steam, air, gas or vapor. In this exhibit a large quantity of atomized liquid is blown through the unit and separated from the air by the Tracyfier.

Other standard production units of tracyfiers are shown and also other Blaw-Knox products.

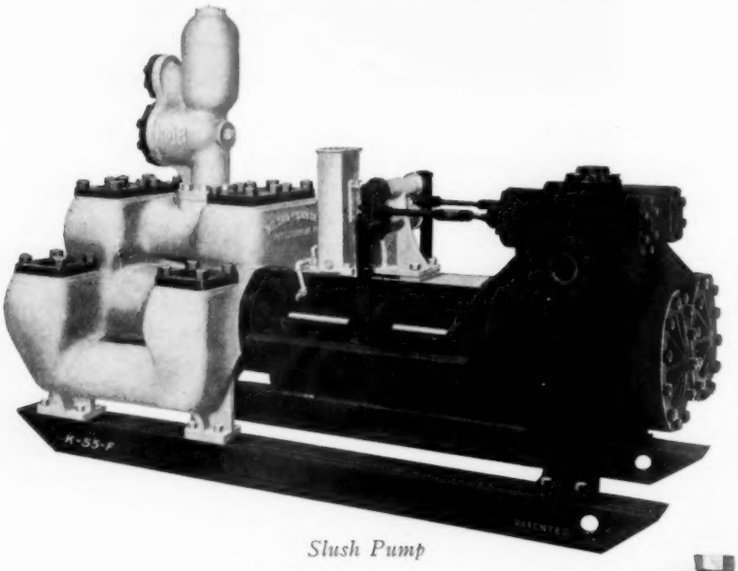
Murray Tool & Supply Company

WIRE ROPE

Murray Tool and Supply Company of Tulsa and Cleveland, Oklahoma, is displaying the new Universal A. P. I. wire rope for oil country use.

Made for high tensile strength and conforming to A. P. I. specifications, this wire line has been developed from experience in field study in handling some 8,000 to 10,000 wire lines in this territory. The new Universal wire line is available as both drilling line and sand line as well as rotary lines and stocks are carried at the branch stores of the company throughout the oil country.

Wilson-Snyder long-stroke slush pumps also are being displayed through the Murray Tool and Supply Company, this company being distributors in the Mid-Continent field.



Slush Pump

SLUSH PUMP

The design, construction and mechanical operation of the Wilson-Snyder long stroke slush pump remains the same. Additional features have been added in the interest of economy and to anticipate future operating conditions. A special fluid piston has been designed. The piston rod has been improved and a locking device has been added to the steam piston rod nuts. The steam cylinder is made extra heavy with reinforced ribs in line with the general trend of using higher steam pressures.

The long stroke and direct flow and balanced piston valves were part of this pump since its beginning as were the other features, including fluid end in one casting, tested all over at high pressures including suction chamber; steam end and cradle in one casting; air chamber and strainer in one castting, making but three principal castings with the minimum number of joints. Six feet support the pump, and four of these are under the fluid end to lessen the strain at the joint between the steam and fluid ends. Central location of the air chamber enables the slush to travel directly from the open discharge valves to the discharge outlet without passing over the valves that are closed.

The lubrication is automatic. A cast iron oil tank of ample capacity holds the reservoir of oil from which the oil is led to all moving parts through built-in leads.

All flanges are placed so as to prevent interference of one by another. The cradle end of the liner is reached through the suction valve chamber. The valve caps are forgings and each one has a hand-grasp to facilitate safe and easy handling.

Bethlehem Steel Company

PIPE

The exhibit of Bethlehem Steel Company is devoted principally to pipe. Samples of the various sizes made by this company, ranging from one-eighth-inch to 16 inches in diameter, are shown. The pipe made by the company includes lap-welded and butt-welded, in black and galvanized, in standard weight, extra strong and double extra strong. Other pipe includes line pipe, lap-welded drive pipe, Boston Merchant casing, reamed and drifted pipe, dry kiln pipe, signal pipe and lap-welded steel boiler tubes.

A number of novelties made of pipe are shown, and special sections are displayed to illustrate the threads at joints.

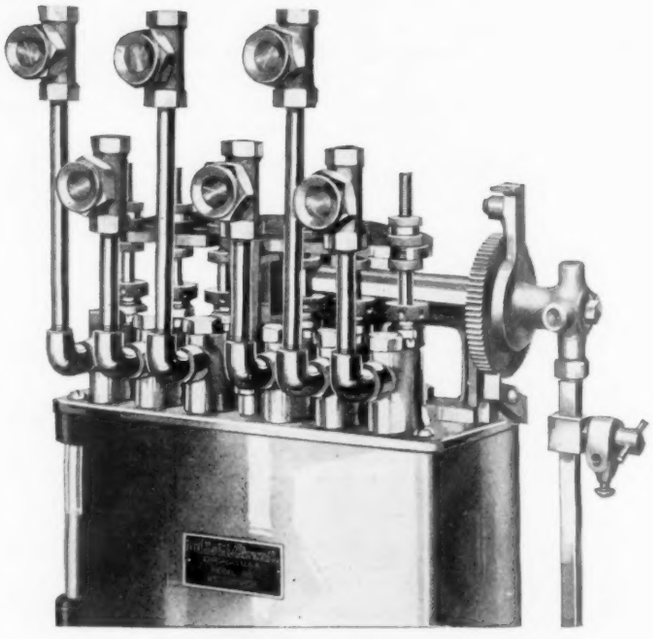
Hills-McCanna Company

PROPORTIONING PUMPS

The Hills-McCanna Company is exhibiting a line of proportioning pumps along with a variety of "force feed lubricators" for oiling pumps, compressors and steam-engines, and the Young tank car bottom outlet valve.

The proportioning pumps are demonstrated at the exhibit to show their positive action and the possibilities for regulation of feed. These proporioning pumps are used for various types of treating, handling crudes and charging stock at the well or in the refinery, and also for laboratory purposes, for processing mixtures.

The pumps are designed to give the advantages of a better mix, a closer control of constituents, accurate feeding and measuring.



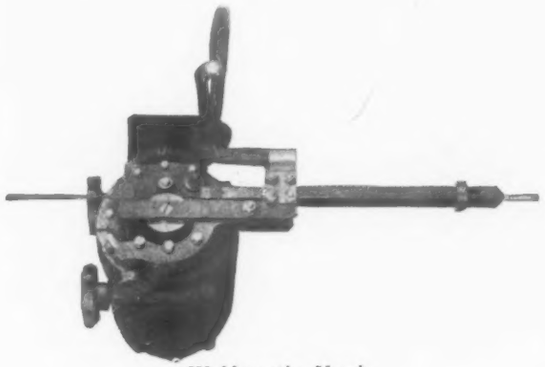
Proportioning Pump

VALVES

The Young valves are described as drip tight, constructed to eliminate loss of tank car contents at the loading rack or in transit. The valves have no metal faces.

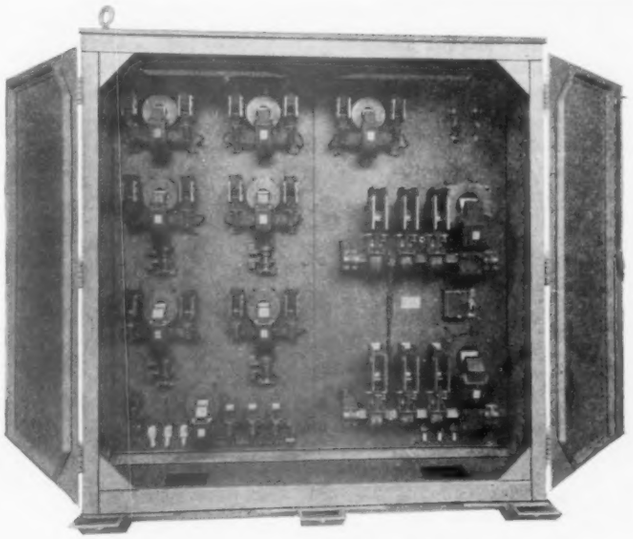
Westinghouse Electric & Manufacturing Company

Westinghouse Electric and Manufacturing Company has on exhibit the following equipment:



Weldomatic Head

The new Westinghouse "Weldomatic," featuring the new automatic welding head which is in operation, demonstrating the welding of pipe lines. A pipe handling tool is used to adjust the pipe for the circumferential welding of joints. The welding current is supplied by a 400 ampere portable motor generator set.



Rotary Drilling Controller

A rig lighting transformer.

A Westinghouse Chromilite floodlight.

A 150 horsepower mechanical drive turbine and a 3 kilowatt turbine generator.

Light sensitive relays.

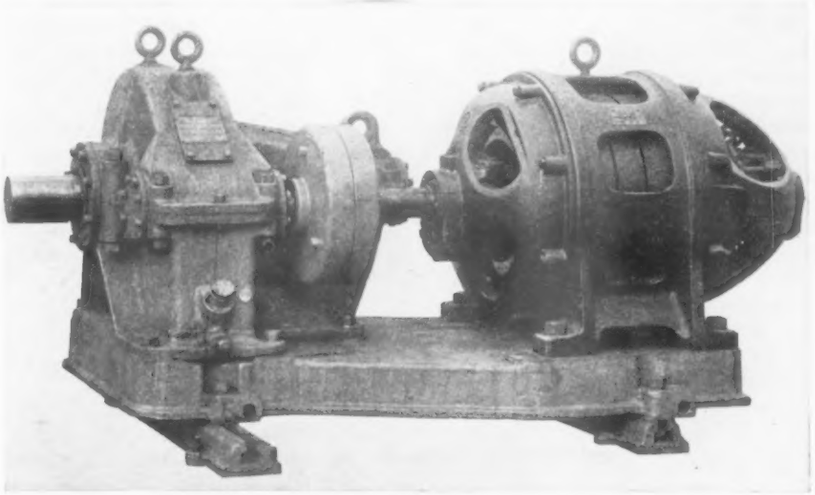
A Westinghouse-Nuttall reduction gear.

125 horsepower oil immersed magnetic control unit.

ROTARY DRILLING CONTROLLER

Magnetically-operated control units are available for use with the 125 horsepower rotary drilling motors. They are completely wired and assembled at the factory, thus facilitating transportation and installation.

All parts of the control unit are mounted on a heavy rigid structural steel framework. Three skids made of six-inch channels are welded under the framework and, in the end of each skid, holes are drilled so that hooks can readily be inserted for dragging the control unit from one location to another.



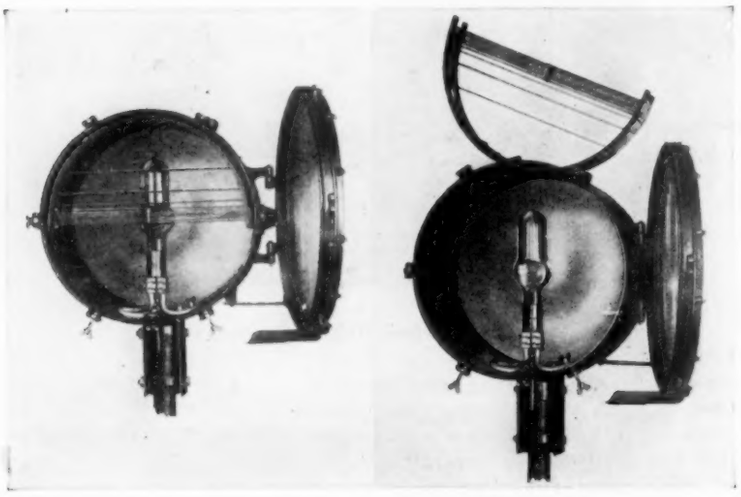
Single reduction unit complete

A 200-ampere portable gas engine driven welder. This is in operation in a small welding booth so that visitors may view the operation. A practical welding operator is on hand to discuss any welding operation or problem.

Complete Generator Unit and Turbine

Gas Engine Welder

A heavy sheet steel cabinet is incorporated in one end of the framework for enclosing the control panel. The front of the cabinet is provided with two rigid hinged doors with a special handle for holding the doors shut firmly. The handle is arranged so that the doors may be padlocked shut. Knockouts on the side of the cabinet and large front connected terminals at the bottom of the control panel provide for easy wiring.



Chromilite Floodlight

Eye-bolts are provided at the top of the unit so it can readily be hoisted. Sheet steel sides, easily removable, give access to the rear of the panel.

The control panel is made up of ebony asbestos lumber 1½-inch thick and it includes all necessary contactors and relays.

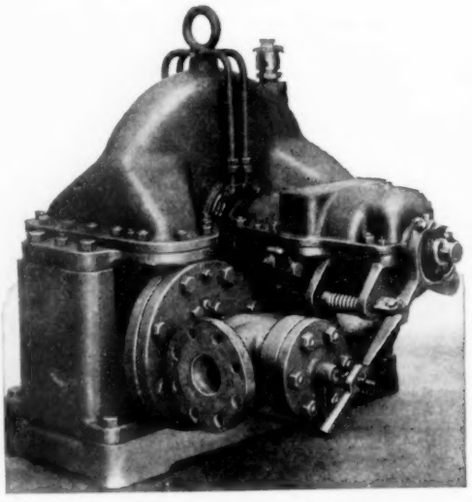
The three-pole primary contactors with magnetic blowouts provide for forward and reverse operation of the motor. They are mechanically interlocked to prevent closing both contactors at the same time.

Seven two-pole secondary accelerating contactors with magnetic blowouts provide speed control in either direction to give a total of eight points of acceleration.

The reversing contactors and accelerating contactors are provided with magnetic blowouts and are splitters which reduces burning and pitting of the contacts to a minimum and thus increases their life.

A three-pole contactor provides for cutting the auxiliary resistance out of the motor secondary in one step. Normally this contactor is open so that the auxiliary resistance is cut in during drilling and is closed to cut out the auxiliary resistance during hoisting.

The auxiliary resistance contactor is arranged for operation from a "hoist-drill" push button which is supplied for mounting on the draw works post.



Turbine

Since the auxiliary resistance contactor can be operated independently of the reversing or accelerating contactors, 16 points of speed control are provided for either forward or reverse operation.

Current limit accelerating relays on the last four points provide maximum torque and smooth acceleration when pulling a string of frozen casing or starting a stuck bit, yet allow very rapid acceleration when hoisting light loads, such as running up blocks light.

Rig Transformer

A thermal-type overload relay enclosed in a cast iron cover is included on the panel for providing overload protection to the motor.

The safety enclosed entrance switch with renewable fuses provides for readily disconnecting the entire equipment from the line during inspection or repairs.

A non-corrodible, non-breakable, edgewound strap resistor especially designed for rotary drilling service is mounted in the rear of the frame work.

With each equipment there is also included: a cam-operated master switch arranged for operation from the derrick floor. This master switch can be mounted in any convenient location. The switch provides for easy and simple operation. An ammeter for mouting in any convenient location in the derrick is included. The current transformer for operating the ammeter is mounted and wired on the control framework at the factory.

A "stop" push button for quickly stopping the motor is included.

The "Hoist-Drill" push button is furnished separate from the control unit so that it can be mounted within easy reach of the driller.

Merco Nordstrom Valve Company

VALVES

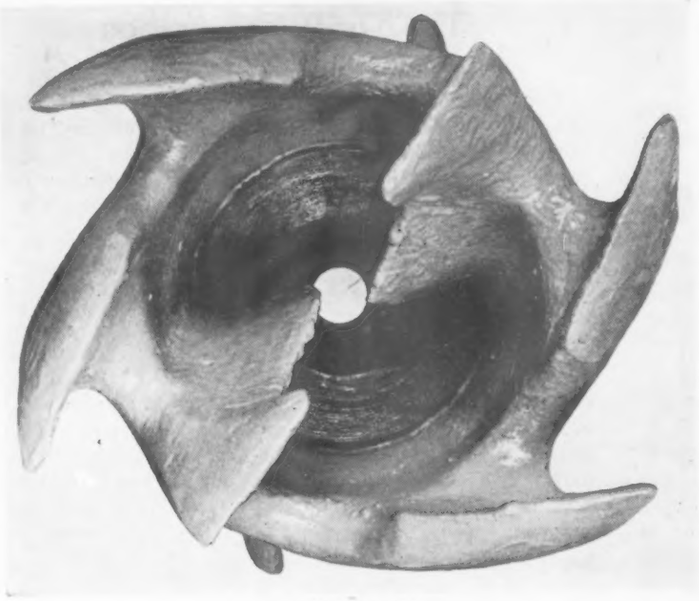
The Merco Nordstrom Valve Company is showing a complete line of Nordstrom valves in all sizes and types. These valves are of the lubricated plug cock type used for both oil and gas.

Literature covering the slogan campaign now being carried on by this company, in which $500 in cash prizes is being offered for the best slogan submitted regarding Nordstrom valves, is being distributed at the company's booth.

Kerotest Manufacturing Company

VALVES

Kerotest Manufacturing Company, Pittsburgh, is featuring newly developed products, including drilling valves, flow line valves and Christmas tree fittings testing up to 6000 pounds, along with an entirely new design of cast steel high pressure throttle valve for use on steam engines for rotary or cable tool drilling. The exhibit also shows a new type high pressure oil saver for drilling in or finishing wells with cable tools.



Drilling Bit

Wieman-Kammerer-Wright Company, Inc.

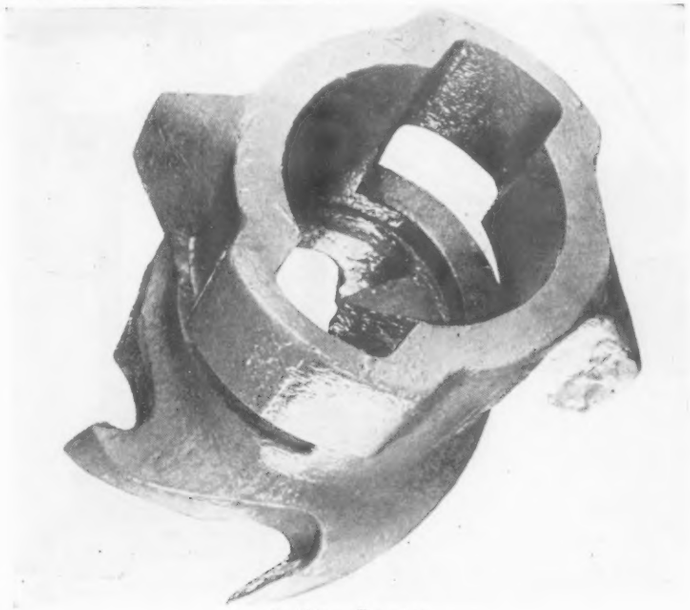
The Wieman-Kammerer-Wright Company, Inc., Hollydale, California, is featuring at its exhibit an improved drilling bit and improved drilling reamer.

DRILLING BIT

The W. K. W. muliple tooth bit, Model "B-2" is a leading item in this display. There have been various changes in the Model "B-2", such as arranging the teeth to perform to the best advantage in all kinds of formation. The principle, however, remains the same, that is to cut a core and then destroy it. The outermost blades contact the formation first and each succeeding inside tooth slices off its portion as the bit is rotating. The cone-like portion of the formation which extends upward within the bit acts as a guide and prevents the bit from deviating from the center line.

DRILLING REAMER

The W. K. W. Model 5 Drilling Reamer can be run as a single drilling reamer, or can be connected in tandem for the reaming of hole before setting casing.



Drilling Reamer

The reaming and cutting edges of the W. K. W. Model 5 Drilling Reamer are inset with diamond substitute metal and then faced with hard facing metal.

There are six blades arranged around the circumference of the bit in such a manner that four of the teeth cut the outside gage and the remaining two teeth cut an inner circle at the same level, to provide clearance for the outside teeth. The water course comes directly through the center of the shank, a full size hole being drilled through the shank within 2½ inches of the opening. This remaining 2½ inches from the end of the shank is reduced to a diameter of one inch to form a nozzle which adds to the velocity of the fluid. This short nozzle cannot become plugged. The fluid is directed to all cutting points and is forced out between the teeth, under pressure, carrying the cuttings up around the shank, thereby eliminating any possibility of balling up the bit.

The cutting shoe and method of attaching it to the shank is a new and exclusive W. K. W. feature. The shank of the bit is provided with a pair of lugs for engaging the slots in the shoe.

Stevens Walden-Worcester, Inc.

WRENCHES

Stevens Walden-Worcester, Inc., Worcester, Massachusetts, is featuring a line of heavy duty socket wrench sets and ratchet wrenches used in drilling, machine shop and refinery work.

Ratchet handle, No. OR-916, a simply constructed tool of few working parts, is built for general variety work in a tool house or machine shop. Length is 11 inches with a half-inch opening.

The Heavy-duty set No. 510 wrench offers a liberal margin of strength and durability with special heat-treated sockets, cross-drilled to receive handle, and affording a close grip on the nut. It has a one-inch hexagon broach in back for other combinations.

Heavy duty set No. 500 is a wrench set for the mechanic doing heavy work, as wheel adjustment or brake-lining work.

Ratchet wrench, No. 1132, has a handle of one-inch round stock, broached opening one-inch hexagon, and is 20 inches long.

Twin Disc Clutch Company

CLUTCH

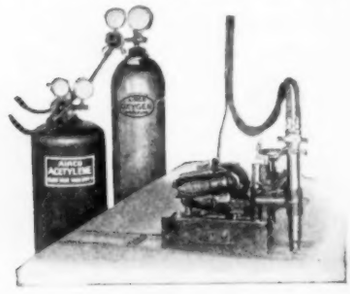
Plate type friction clutches of unusual size and capacity developed for use in deep well rotary drilling rigs, feature the Twin Disc Clutch Company's exhibit.

Two of these new clutches are exhibited, a 24-inch clutch, designed to start smoothly and carry dependably the full load of a 275 horsepower engine, and a 42-inch draw works clutch with capacity to handle a 5000-foot string of standard 6-inch casing. Several other Twin Disc clutches and power take-off units, developed for oil field production work, are also shown.

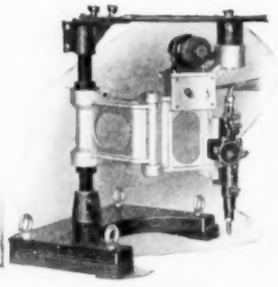
Air Reduction Sales Company

CUTTING MACHINES

The Air Reduction Sales Company, 342 Madison Avenue, New York City, is featuring the new No. 4 Camograph as



Oxygen Regulator



Camograph

an economical means for automatic production cutting of shapes, such as rubber heal moulds, boiler header hand holes and other specialized work of this kind. It is used to cut forms difficult to punch in steel due to the shape, thickness or limitation of punch and die.

The machine has a U-shaped cast iron base to which is fixed a vertical steel post. A cam conforming to the shape to be cut is attached to the top of this post and acts as a guide for a magnetized roller propelled by a variable speed electric motor. This roller directs the machine cutting torch which is clamped to a double hinged arm and therefore free to travel in any path guided by the cam and roller, within the limits of the arm length. A hand wheel adjusts the height of the torch. Shipping weight of the machine is only 215 pounds, and it may be transported to work and from cut to cut. Four eye bolts embedded in the base provide convenient means of attachment for a hoist, trolley or crane. It may also be mounted on a stand for stationary use in production cutting of parts easily handled.

On display also is the Style 5100 oxygen regulator with O-3000 and O-400 pound gauges and a 25-foot length of corrugated oxygen and acetylene hose, which is illustrated here.

Wirt Franklin Petroleum Corporation

The Wirt Franklin Petroleum Corporation, Ardmore, Oklahoma, has an interesting exhibit in the form of a statue of an Indian, which serves to advertise the company's gasoline through the trade name, Palacine, around which interesting legend is built.

This bronze Indian statue is mounted on a five-foot triangular base, which is lighted. The Indian is about seven feet tall, and is represented to be a friend to the motorist.

The story of Palacine is that in the early days when an Indian was expelled from one tribe he wandered on the plains until he met another Indian and held up his hand, as in the bronze statue. If the other Indian or Indians held up their hands and said, "Palacine," the expelled Indian was welcome to join the new tribe.

The Thrift Corporation

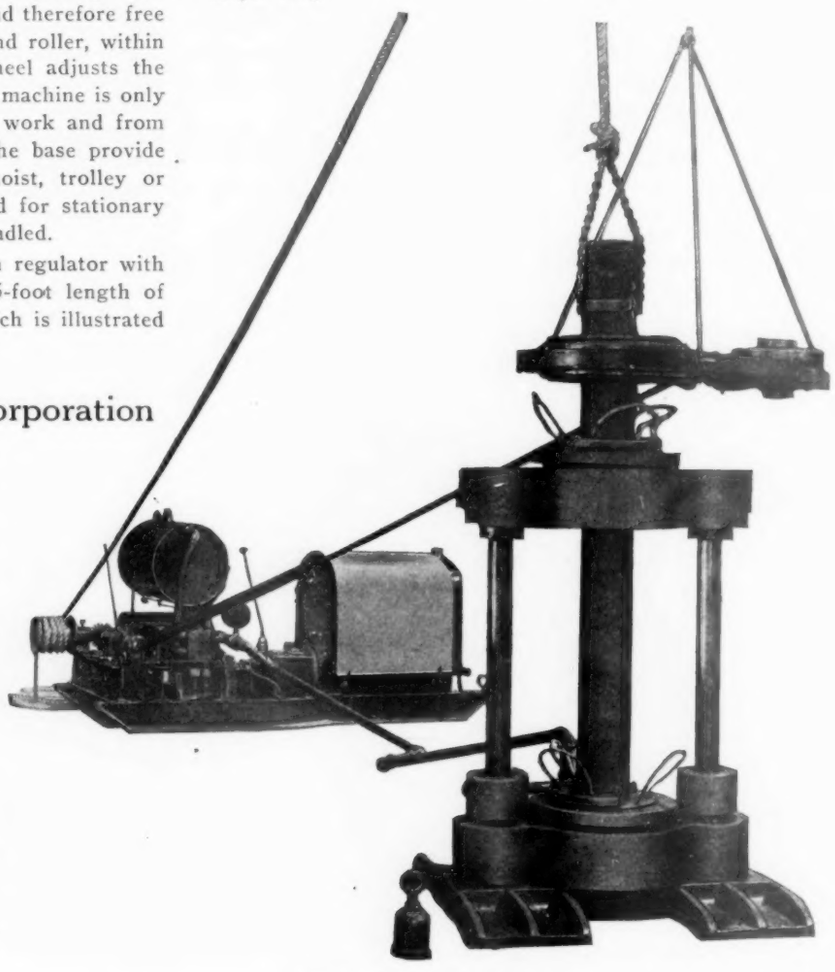
CASING PULLING MACHINE

The Thrift Corporation, Houston, is exhibiting in connection with the Marion Foundry & Machine Company, its hydraulic casing pulling machine, a portable outfit designed for recovering used pipe. The machine is constructed so as to be mounted on a small truck body of an automobile.

The machine consists of a three-cylinder hydraulic pump, mounted with motor and other connections on skids. It is operated by the gasoline motor by means of a power take-off and sprockets with chain.

The hydaulic pump is especially designed to meet the need for high pressure hydraulic use, delivering a large volume of fluid to the hydraulic jacks, which are set on each side of the pipe or casing to be recovered, and suspended below the surface of the ground by means of arch bars and through a bottom major ring. An additional major ring is set on top of the jacks, resting on jack caps, and steel casing or pipe slips are set in both bottom and upper major rings, and as the jacks are elevated by the action of the pump, the slips grip the pipe or casing, which travels with the jacks.

The fluid is released when the jacks have traveled their full length by an especially designed control valve placed near the operator, and the jacks drop back for another elevation, the pipe or casing in the downward action of the jacks being held in suspension by the slips in the bottom major ring.



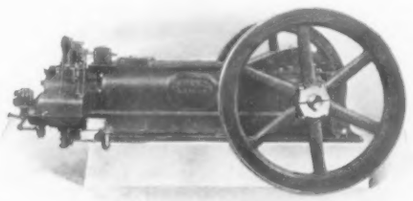
Casing Pulling Machine

Clark Brothers Company

ENGINES

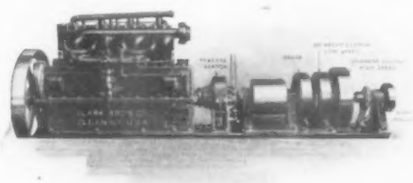
Clark Brothers Company, Olean, New York, is this year featuring four engines as follows:

The Clark 100 brake horsepower horizontal compressor,

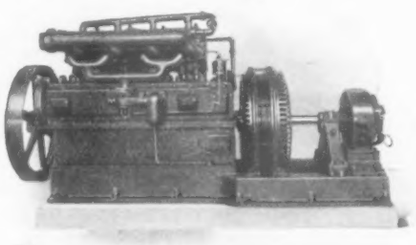


Model HS2 has four vertical cylinders, eight 8½-inch bore x 11-inch stroke, 90 brake horsepower at 400 r.p.m. It uses gasoline or natural gas. Floor space covered 12 x 53 feet and the engine is 78 inches high, with a net weight of 15,000 pounds.

The Clark 40 horsepower pumping engine, Model PB 40, four cycle, has removable babbitt liners in the clutch bearing,



the clutch is bolted to the flywheel by A. P. I. standard flange, and the bearings are chain oiled. The reverse housing is dust and oil proof, and the housing is split to permit removal without disturbing other parts. The clutch yoke is babbitt lined on thrust faces and enclosed so as to retain oil. The clutch



drive shaft is supported by roller bearings mounted in a hollow pulley shaft.

The Clark senior drilling engine is a four cycle, internal combustion engine using natural gas or gasoline. It is a variable engine running at moderate speeds and is direct connected to a heavy duty clutch. Both the clutch and the engine are designed exclusively for oil and gas well drilling.

The 75 KVA Clark four cylinder vertical gas engine, direct

connected to 75 k.v.a. generator, is the Clark two cycle gas engine, direct to Clark strip valve compressor cylinders.

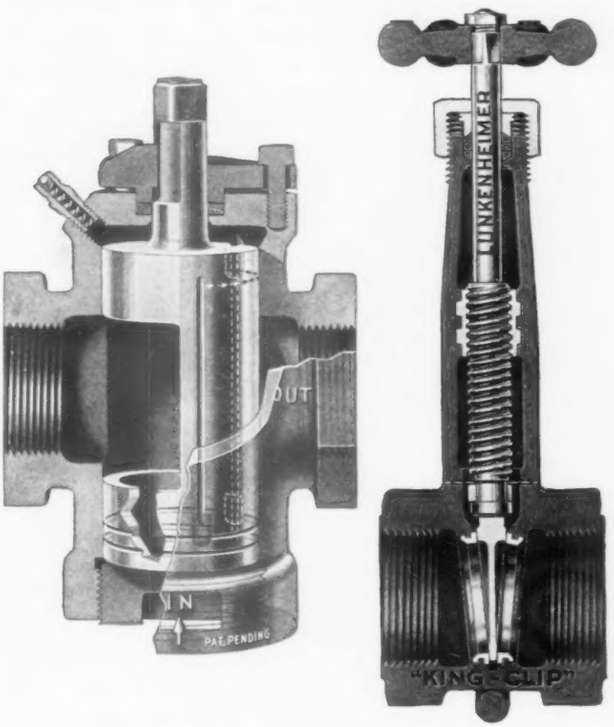
All four of these models are illustrated here, showing the engines which are being demonstrated this year.

The Lunkenheimer Company

VALVES

The Lunkenheimer Company, Cincinnati, is exhibiting a complete line of valves, grease cups, lubricating devices and other engineering specialties, of which the "King-clip" and MacGregor rotary valve are being featured. Illustrations of these two valves are shown here.

Particularly distinctive is the bronze thread bushing in the bonnet of the "King-clip" valve, an exclusive Lunken-



heimer feature offering a non-corrosive contact with bronze stem and protection for the stem threads.

Another feature is the extra long pipe thread to accomodate both American standard and A. P. I. line pipe, a design for eliminating danger of pipe ends jamming against diaphragm of seat rings when screwing up a valve.

The MacGregor rotary valve is lubricated automatically. It is designed, especially in the rotary feature, to minimize valve sticking.

American Tank Company

OIL AND GAS SEPARATOR

The American Tank Company is showing its type No. 5 oil and gas separator designed for comparatively light flowing wells and for pumping wells, a product it has recently introduced.

This type is three feet in diameter and eight feet high with a low normal rating claim of 1000 barrels of oil and 2,000,000 cubic feet of gas. This particular type is being used with a gravity flow and oil seal feature, and as a regular separator with liquid level control and oil and gas valves.

Type No. 10, three feet by 10 feet, is an improved baffle flow tank giving separation through use of automatic controls but eliminating some of the more expensive construction features.

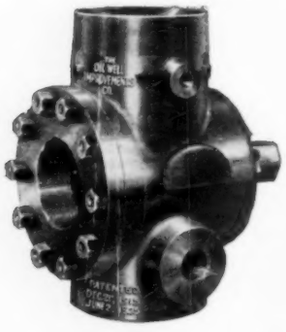
Oil Well Improvements Company

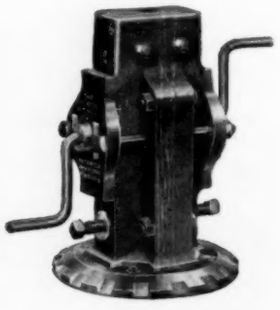
CONTROL HEAD

Oil Well Improvements Company exhibit is in booths 51 and 52, Oklahoma Building.

The company is the originator, patentee, and manufacturer of a control casing head, the roller oil saver, and the Apex stuffing box polished rods. New and improved types of these products have kept pace with the growing problems of pressure, volume, and other field conditions.

An interesting feature of the exhibit is the Type "X"





or chambered control casing head, for running cable tools in and out of the well under pressures and against heavy oil and gas flows.

The Type "X" head is constructed to accommodate a chamber of 10-inch casing of sufficient length to receive the tools. By means of by-passing the pressure from the well to the chamber and equalizing same, the tools are placed on the bottom of the hole or removed from the well without exposing the well to atmosphere and without the loss of oil or gas, or danger of fire or accident.

This unit, consisting of a special control head, oil saver, and stuffing box, is being used with success at Oklahoma City, Yates and other points, and is attracting unusual interest in the producing branch of the industry.

OIL SAVERS, CONTROL HEADS

Other equipment to be displayed will include latch assembly control heads; improved types of roller oil savers; high pressure control heads, and casing and tee heads; and the new Apex stuffing box.

STUFFING BOX

The Apex stuffing box contains but four parts with no bolts, screws, springs or other trick pieces. The conical cover, threaded down on the core or body, automatically adjusts the followers and effects a uniform pressure of rubbers against the polished rod. No wrenches are needed for adjustment. All parts-core, cover, and followers are interchangeable regardless of rod and tubing size. Four inches of slotted rubber packing and babbitted bearings above and below packing chambers are other exclusive features.

Newer control head types embody anchor lugs, by-pass openings, and improved internal construction.

National Lumber Manufacturers Association

WOODEN DERRICKS

The National Lumber Manufacturers Association has for distribution at its booth a 60-page bulletin just issued dealing with the use of lumber for oil industry purposes and based on two years investigation of the use of lumber in oil areas.

A model of the improved type nailed wood derrick is on exhibit embodying the results of the association's investigation.

This model shows that 2 x 10 planks for derrick leg construction is an improvement on the use of 2 x 12 planks, resulting in a structure requiring 2000 feet less lumber.

Jackson Engineering Corporation

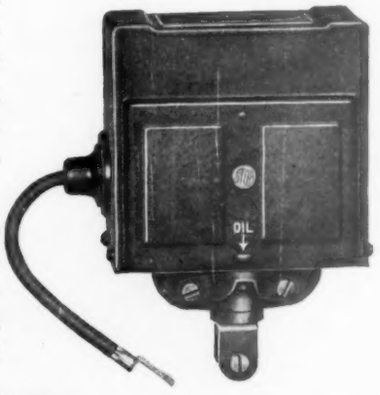
GASOLINE PLANT EQUIPMENT

Jackson Engineering Corporation, Tulsa, designers and manufacturers of gasoline absorption plants and fractionating units is also representing Fluor Construction Company, manufacturers of Fluor redwood cooling towers, and Heat Transfer Products, Inc., builders of heat transfer apparatus for the oil industry.

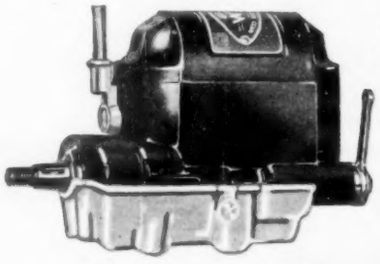
Wico Electric Company

MAGNETOS

Wico Electric Company, Springfield, Massachusetts, will this year exhibit the Type OC, EK and B magnetos. The latter two magnetos are illustrated here.



The Wico magneto produces a spark independent of speed, therefore producing a spark for starting regardless of how slow the engine may be turned over, the leading feature offered by this product. It is further featured for its few parts and its elimination from the delicate class, and is described as more of a machine than an instrument.



There are three methods of driving the Type EK magneto, including the eccentric and strap drive, the push rod drive and the combination drive.

MacClatchie Manufactuing Company

GEARED BRAKES AND DRAW WORKS

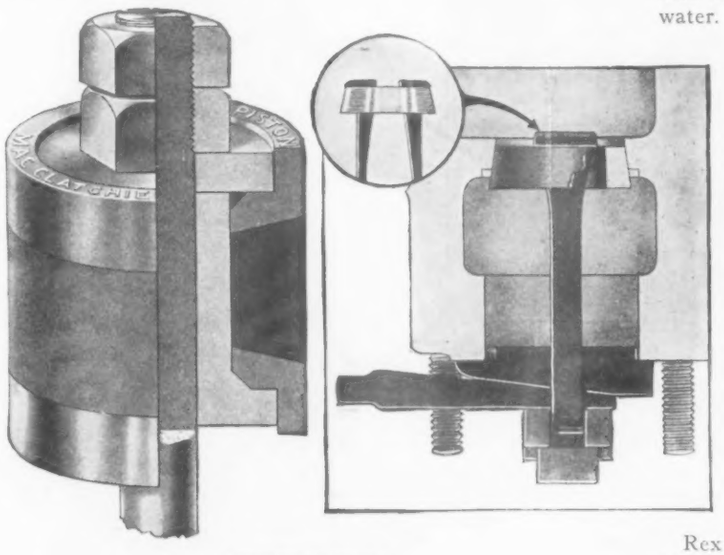
Displayed for the first time this year, the new MacClatchie geared brake for draw-works and "Pipe-Tectos," McClatchie's new rubber casing protectors play a prominent part in the exhibit of the McClatchie Manufacturing Company, Compton, California, Booth 110, Oklahoma Building.

AVIATION ENGINE

Another feature of the MacClatchie display is parts and pictures of the MacClatchie "Panther," L-head radial aviation engine, recently developed by the company.

Great interest has been displayed in the industry as to the new draw-works brake, which increases the pressure on the lever, and compounds two to one against the kick-back.

A miniature derrick, equipped with small working models of various MacClatchie products is exhibited in the booth, which is in charge of J. Warren MacClatchie, S. H. Atkinson, and A. O. Nelson.



SPECIALTIES

Among the other MacClatchie specialties included in the exhibit are the automatic safety cat-head rotary underreamer; mud pump valves; the MacClatchie cementing combination, made up of three MacClatchie products, the cement head, quick union and stop cocks; pump liner puller; valve seat puller; flow nipple; and automatic pump piston. Not only are several types of valves displayed, but a large model of the MacClatchie valve is shown in action. The MacClatchie flow nipple on display was formerly known as the "Dailey" flow nipple, and the MacClatchie Manufacturing Company has just bought exclusive rights to the specialty.

McAlear Manufacturing Company

REGULATOR

The McAlear Manufacturing Company's No. 300 back pressure and vacuum casinghead gas regulator is sensitive in operation and convenient to install and operate. There are no stuffing boxes nor dashpots. It is an all-service trim, making it suitable for either corrosive or non-corrosive service. A choke valve is adjusted to eliminate the tendency to pulsate or chatter where service is severe. By reversing the body of this regulator a reducing regulator results. A remote control connection is provided so that control from a distant point in the line may be had if desired.

STRAINER

The McAlear No. 528 strainer being shown at the exposition is the pressure and suction strainer used on oil, water and gasoline lines to prevent damage to mechanical equipment and stoppage of lines by foreign objects of any kind. It is also used on flow lines from wells, preventing foreign matter, as rubber from swabs, from entering the trap and lodging in the float valves.

TRAPS

The No. 686 open bucket, oil and gasoline traps is provided with ample leverage by the long bucket which is of the quick acting sloping bottom type. The gasoline and oil traps are equipped with stainless steel valve parts; consequently suitable for corrosive service. Where expansion freezing is encountered these traps are equipped with jacketed valve chamber covers for circulation of steam or hot water.

Chain Belt Company

REX SOLID COTTER

Chain Belt Company had extended the force-fit of Rex Chabelco oil well chain to the last point with the new Rex solid cotter, a metal piece that fills up the pin hole all the way through, locking the pin securely and permanently into the sidebars. It is not a cotter pin. The Rex deepwell Chabelco chain is made in two sizes: the 1030 DW 3, which is an A. P. I.-3 chain, and the 1240 DW 4, which is an A. P. I.-3 chain.

The Rex solid cotter was designed to prevent the trouble of flying cotters, and the inconvenience of riveted chains. The accurate force fits between ground seamless bushings and the special steel sidebars, between ground case-hardened pins and sidebars, the close tolerances, in pitch, between pins and bushings.

Rex sidebars are made of alloy steel, are punched and blanked in one operation from this steel. The sidebar holes are multiple punched in one operation and then broached. Seamless, alloy, rollers are also used with a working barrel finish on the inside.

Pins are case-hardened alloy steel, ground to exact dimensions. The Rex chain has new lubricating features that give the oil a proper channel to the bushing and the pin.

The solid pitch cotter chain is being used on some of the country's deepest wells.

Mine Safety Appliances Company

SAFETY EQUIPMENT

The Mine Safety Appliance Company, Pittsburgh, is displaying a line of safety equipment designed for oil field and refinery use.

The H-H inhalator, for resuscitating victims of gas asphyxia, is used for supplying carbogen, consisting of five per cent carbon dioxide for stimulation and 95 per cent of oxygen for ventilation of the respiratory system.

The M-S-A type D tank gaugers' mask affords protection against hydrogen sulphide gas and other fumes from sour crudes and distillates. It employs supersize canisters and may be used for protection against deadly hydrogen sulphide gas where there is sufficient oxygen present to support life. Where sufficient oxygen is not present, that is, in confined spaces such as a tank car, the M-S-A hose mask is used, furnishing the wearer with fresh air from outside the gaseous area.

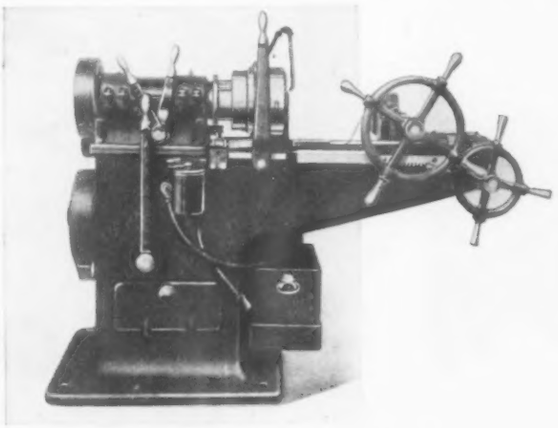
The M-S-A combination hose mask (fresh air type), for use in the refinery, is also on display.

The F-M continuos flammable vapor indicator is an instrument designed to continuously indicate the degree of flammability or proximity to explosive conditions of combustible gases or vapors. It serves as a guide to safe and economical ventilation control in processes where explosive gases are likely to collect or be liberated. Illustrations of these four products are given here.

Williams Tool Corporation

PIPE AND THREADING TOOLS

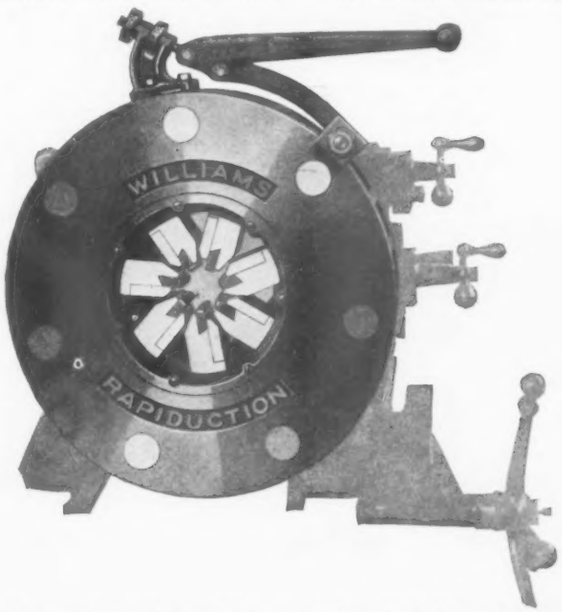
The Williams Tool Corporation, Erie, Pennsylvania, is displaying four pieces of equipment this year, as follows:



RAPIDUCTION DIE HEAD

The capacity of this head is two and one-half inches to eight inches inclusive, and only one die head is required to cover the active range. Two sets of chaser bits are furnished with die head. Both sets cutting two and one-half to eight inch, eight threads.

In the new Williams patent reduction die head the chaser bits are clamped and held rigid in a large steel holder with wide bearing surfaces, thus eliminating the use of any die support bushings. A quarter turn of wrench realeases the bit and it lifts out. To replace push bit back



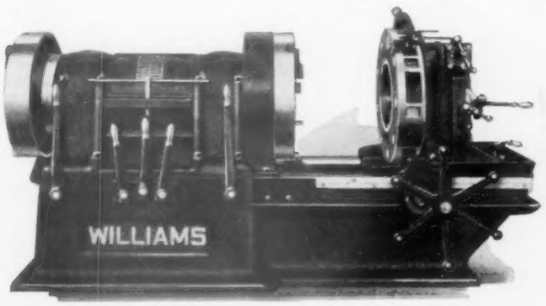
and up against the positive stop, then lock in position.

Bits can be replaced for less that it would cost to sharpen and regrind. The cutting edge of bit is approximately on center, thus giving a natural clearance on all sizes of pipe.

No piping is required on the face of the die head to convey the cutting oil to the chaser bit. The cutting oil is forced into a chamber into the die head and three specially arranged outlets allow it to deliver an ample supply, properly distributed for all purposes.

On the outside diameter of the cam and convenient for the operator are the graduations and markings for setting die head for the various size pipe. A quick opening and closing lever on top of die head is convenient and handy for operator.

Micrometer adjustment has also been provided, by ad-



justing the two knurled hand wheels on cam bracket. This head has seven chasers.

PIPE THREADING MACHINE

The No. 12 rapiduction pipe threading machine, having a capacity of 3½ to 12 inches with extra capacities of 2½ and three inches, has a single die head covering the complete range. High speed chasers are used and it is unnecessary to change chasers except for different pitch threads. One or more chasers may be replaced without renewing the entire set. A quick opening lever handle works on the die head with a micrometer adjustment. A special cascade oiling system delivers three streams of oil on the chaser bits at once. The die head is a separate unit.

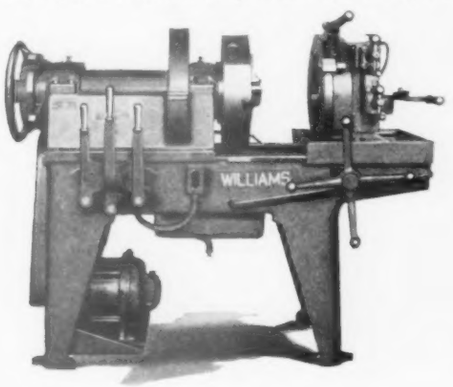
There is a single pulley drive working with a 10 horsepower friction clutch on the machine, and a dual control clutch lever for stopping and starting. Eight speeds are controlled by three gear shift levers. The machine is equipped with roller bearings with the main bearings self-oiling, fed with an endless chain.

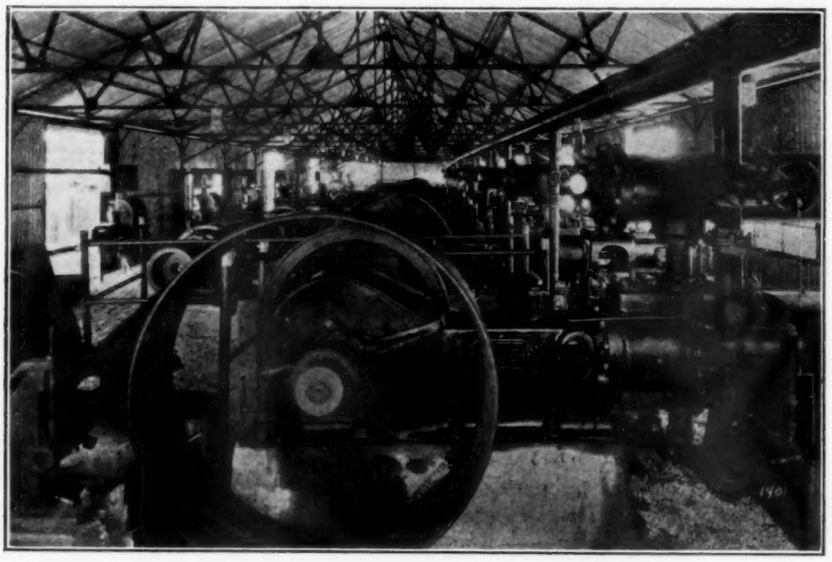
RAPIDUCTION BOLT THREADING MACHINE

Rapiduction bolt threading machines, 1½ and two-inch single spindle, is being displayed. Distinctive features are eight changes of spindle speeds, automatic die release, self-closing die head, rapid die changing feature, automatic lubrication, centralized controls within easy reach of the operator, direct motor drive through silent chain and friction clutch, and emergency die release.

THREADING MACHINES

The Wilcox pipe and nipple threading machines on display offer the following outstanding features: Four changes of spindle speeds with reverse gear, steel gears and friction clutch enclosed to run in oil, rapid adjustment from one size pipe to another, rapid reaming device and centralized controls within easy reach of the operator.





Compressors at Seminole equipped with France Packing

France Packing Company

PACKING

France Packing Company, Philadelphia, has on display its lines of packing for steam, air, gas, ammonia and a variety of other uses.

France metal packing for steam, air, gas or ammonia is made of vanadium cast iron, and is designed for any engine under any condition. Nothing but metal touches the rod.

France Tiptop plastic metallic packing is used for corliss valve stems, header, steam valve or water valve stems, small valve stems on engines or pumps, water plungers on pumps, expansion joints or any rod or stem that travels in line. It is made of antifriction alloy compressed into rings to fit the rod and stuffing box, and also into bars or segments that can be cut to lengths.

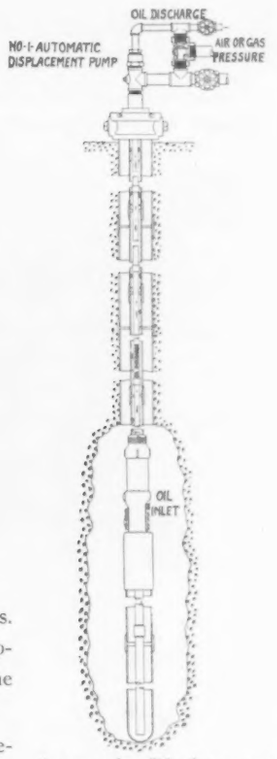
France No. 2000 packing is a composition asbestos sheet. The long fibre is procured from Canadian rock asbestos and is bound together with enough "binder" to make a pliable and strong gasket material.

Miller Improved Gas Engine Company

DIRECT GAS ENGINE DRIVEN COMPRESSOR UNITS

Miller Improved Gas Engine Company of Springfield, Ohio, has added another unit to the Watts-Miller line, which is exhibited at the exposition. The above unit is an 80 horsepower, single cylinder, four cycle, direct driven compressor unit, which is fully self-contained with pressure lubrication, water cooled exhaust valve, throttling governor, fully enclosed, and which has a number of new features. Accessibility of this unit is also one of the leading features, as there are no obstructions on the front of the unit to interfere with adjustments. The merits of this unit can be appreciated by anyone skilled in the art of engineering practice.

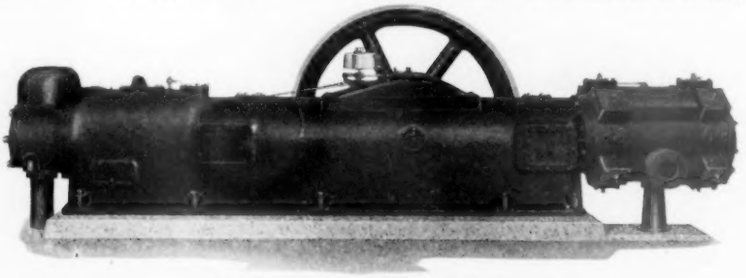
They will also exhibit a 170 horsepower, twin cylinder, direct gas engine driven compressor unit, on which there has been a number of improvements made.



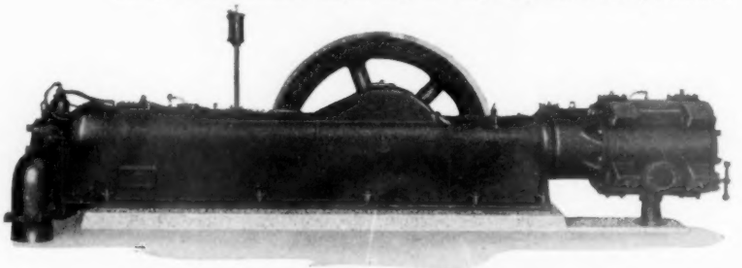
Automatic Displacement Pump

AUTOMATIC OIL PUMPING EQUIPMENT

In connection with the above display there will be an exhibit of the Watts automatic displacement pump for pumping, along with the display of several other oil pumping and flowing devices which will be in actual operation. This displacement pump, as well as other equipment that will be shown, is a new departure in oil pumping equipment and is fully automatic, the pump automatically adjusting its capacity to each particular well in which it is installed. With this pump there is no back pressure of air or gas produced to the well to retard the flow of oil feeding to the well.



80 *Horsepower Single Cylinder*



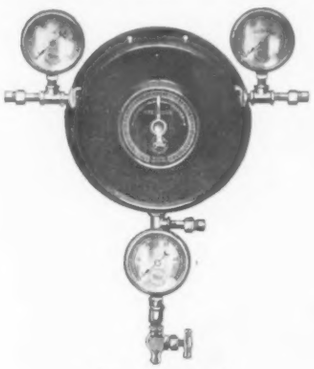
170 *Horsepower Twin Cylinder*

Taylor Instrument Company

Taylor Instrument Company is exhibiting a line of representative instruments for the measurement and control of temperatures and pressures with a working exhibit illustrating the operating of high and low pressure pilot operated controllers.

CONTROLLERS

This type of controller requires either compressed air or gas for its operation and finds extensive and highly successful application in refineries and gasoline plants on such applications as the following: Maintaining constant reduced gas pressures in lines to stills and boilers, maintaining constant reduced steam presures, maintaining constant compressor discharge pressures, and maintaining constant back pressures in absorbers, accumulator tanks, gasoline fractionators or stabilizers and residue gas lines in natural gasoline plants and also constant back pressures in receiving drums of refinery cracking units.

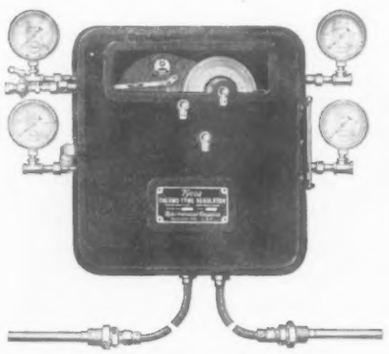


Pilot-operated Pressure Regulator

TYCOS RECORDING THERMOMETERS

Two other features of this exhibit comprise the section showing different stages in the manufacture of Tycos recording thermometer and a similar unit illustrating the stages in the manufacture of industrial thermometers.

The Tycos line of automatic temperature controls comprise the so-called tube system and valve, the valve operating from the pressure in the tube system. The tube system consists of a connecting tube at one end of which is a sensitive member, with the opposite end connected to a set of diaphragms which control the movement of the valve. Through this valve the heating or cooling medium flows to the apparatus under control. The tube system is partially filled with a liquid so that when heat is applied to the bulb, a vapor pressure is set up in the tube system, which pressure actuates the diaphragms. The expansion and contraction of these diaphragms in turn control the closing or opening of the valve in the line.



Tycos Thermo-Tyme Regulator

REGULATORS

Complete description is given at the exhibit, on the above line, on the capillary type of pilot operated temperature regulators, on the tension actuated regulators, on the mercury actuated regulators on the gas actuated type of temperature regulaors, and in he unique instrument in the controller line, the thermotyme regulator, the latter controlling the temperatures in relation to time.

PRESSURE CONTROLLERS

The pressure controllers are divided into two general classes, the self-acting and pilot operated types. The self-acting is exemplified by the reducing valve, commonly applied for reducing pressures in pipe lines, while the pilot operated pressure controller uses an outside motive force of either compressed air or gas. This latter type is available either as a pressure reducing regulator or as a back pressure controller.

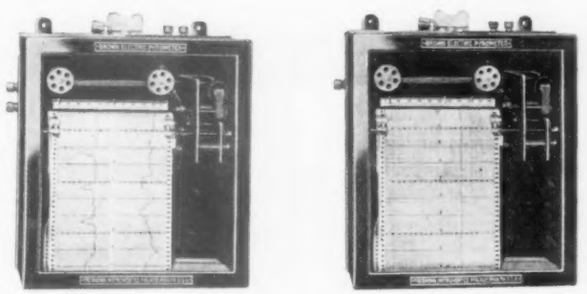
Self-acting Regulator

Brown Instrument Company

FLOW METERS

Brown Instrument Company is exhibiting a number of instruments used in refining, gasoline plants and the production branch of the industry. Among these is featured the Brown electric flow meter, which is designed for safety against high pressure in metering gas, oil and steam. It is tested to 1500 pounds pressure, affords a zero adjustment easily made, and is made to show no effect to varying voltage. It is equipped with a double range manometer, has no stuffing boxes and has a forged steel manometer at the base. The meter face gives a legible open scale chart with an integrator easy to read, and an integration record on the chart rim. The chart is in an aluminum case, which is dust-proof.

CO_2 Meter



Brown Pyrometers

This meter is now operating in refinery work on jobs involving differential pressures ranging from 0.217 inches of water up to 16 inches of mercury, and conditions where the manometer is under pressures running from hundreds of pounds down to a few ounces.

The Buda Company

ENGINES

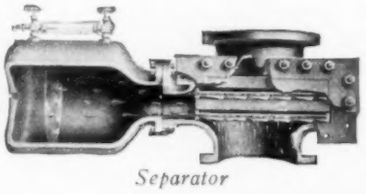
The Buda Company, Harvey, Illinois, is this year exhibiting a Buda-M. A. N. Diesel engine, 92 horsepower, a Buda-M. A. N. 180 horsepower Diesel engine, a gasoline unit, JH-4, a gasoline unit, JH-6, and a WTU lighting plant unit.

Griscom-Russell Company

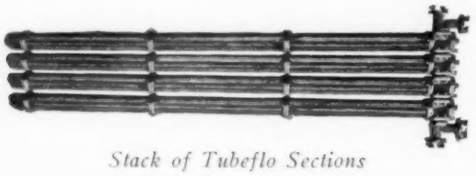
HORIZONTAL BUNDY FLANGED OIL SEPARATOR

The Griscom-Russell exhibit includes the following units:

This unit is used in compression gasoline plants for knocking down the gasoline contained in the gas from the compressors. It is also used on the outlet from air coolers to knock down the entrained moisture in the air after it has been cooled. The unique design of the Bundy separator removes gasoline or moisture from the gas or air passing through, and at the same time prevents the liquids which have been removed from again entering the path of the gas or air passing through the separator. These functions are accomplished by the patent design and arrangement of the multiple-grid type plates. These plates are arranged with staggered columns to baffle the path of the gas or air, and interior channels conduct the entrained drops of liquid away from the path of the gas or air and down into the receiving chamber at the bottom of the separator.



Separator



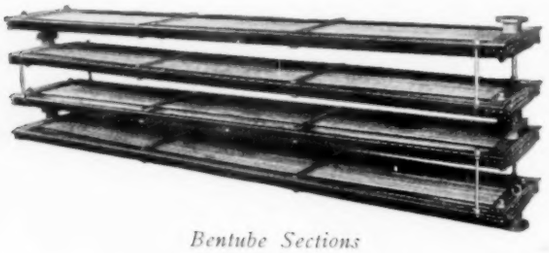
Stack of Tubeflo Sections

G-R THREE-WAY VALVE

This valve is used to enable a unit to be shut down for cleaning without disturbing the operation of other units which are connected in series with the unit to be cleaned. It also simplifies heat exchanger piping where a by-pass is wanted.

G-R TYPE C TUBEFLO SECTION

A model of the section and a head casting and body casting will be exhibited. The G-R Tubeflo section has been specially designed for use as a liquid to liquid exchanger or cooler where dirty or corrosive oils are to be handled. It is built of special mixture cast-iron to withstand high temperature and corrosion and has straight, smooth, cored passages of liberal diameter with removable heads and covers for easy cleaning. Sections may be arranged in stacks as required for the cooling effect, and any number of stacks can be used in parallel for additional capacity. G-R Tubeflo sections standard and interchangeable and may be quickly dismantled, transported and re-erected in other locations as required by changes in the plant.



Bentube Sections

MODEL OF G-R BENTUBE SECTION

The G-R entube section is designed for atmospheric or submerged cooling service, especially with porr quality cooling water. These sections have the feature of shedding scale automatically by flexure of the admiralty metal tubes which are set with an initial curvature into cast-iron or steel headers held in position by a bar of connecting steel thrust members. The change in curvature which provides the scale shedding feature occurs with change in temperature, and in most cases even the slight changes in curvature during normal operation are sufficient to keep scale from building up to a thickness which might interfere with the rated cooling capacity. The sections may be mounted in stacks with series or parallel connections as required by capacity or cooling effect, and may be placed either under a cooling tower, in the open, or in a condenser box.

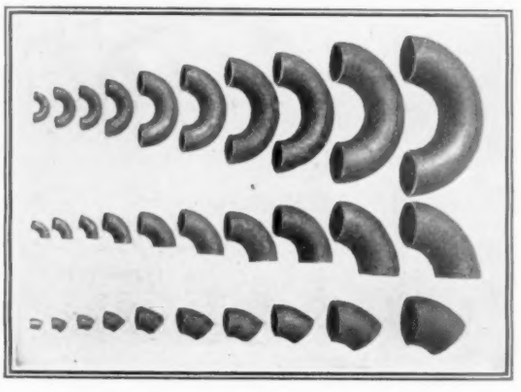
A photographic rack is also displayed, showing photographs of various other apparatus for oil refineries and also G-R evaporators.

Tube-Turns, Inc.

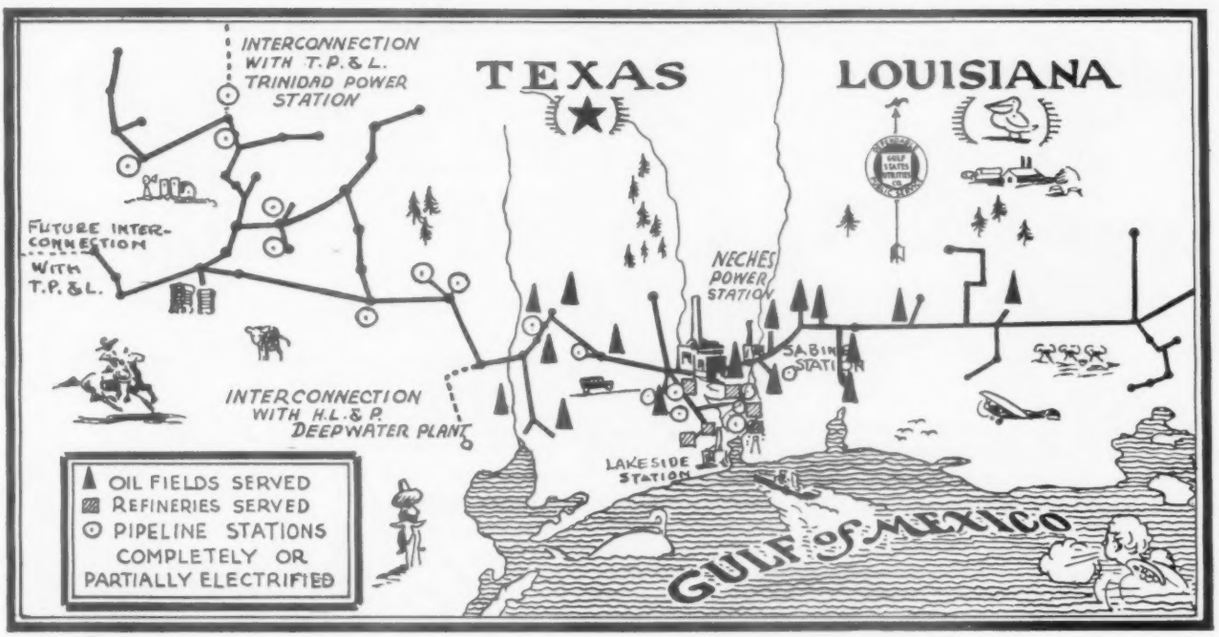
TUBE-TURNS

Tube-Turns, Inc., of Louisville, Kentucky, is showing its products, tube-turns, forged seamless fittings for pipe welding. These products are including the outstanding lines of the company, such as flanges welded on, flanged stubs welded on, and tube turns made to meet any desired angle.

This company's products are being displayed in the booth of the Moorlane Company at the exposition.



ELECTRIC POWER PREFERRED



The use of Central Station Electric Power has steadily increased and a number of extensions to the present system are planned to serve the industry even more completely in this territory.

Gulf States Utilities Company

BEAUMONT, TEXAS LAKE CHARLES, LA.

UNDER EXECUTIVE MANAGEMENT OF STONE & WEBSTER INC.

Appleton Electric Company

UNILETS

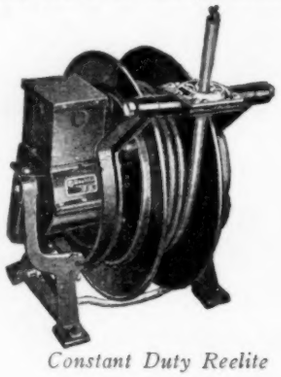
Appleton Electric Company, 1701-29 Wellington Avenue, Chicago, is exhibiting its line of threaded and no-thread malleable iron unilets and a miscellaneous line of conduit fittings.

No-Thread Unilets

The no-thread unilets of this company are featured by their time saving in installation under adverse conditions. Alterations are made easy and quick through the use of these conduit boxes, which are made of malleable iron and which are made to show a high degree of resistance to shocks and vibration and to corrosion.

Threaded Malleable Unilet

The malleable iron unilets, threaded, undergo a heat treating process to the point of developing a strong material to prevent crystallizing. The tough strength and ductility is retained under conditions of heavy vibration, according to the manufacturer. These materials too, are highly resistant to rust and corrosion. A feature of this equipment is the lower wiring cost in jobs where it is used. Screws on unilet covers and porcelains are anchored with washers which prevent their loss. The joint of the unilet is described as being waterproof and corrosion-proof.



Constant Duty Reelite

The constant duty reelite for paying out and automatically retrieving electric conductors for power and light is especially applicable to machines where a varying length cable is required. The power cable is connected to the constant duty reelite by means of heavy brushes operating on commutators, the wire of the reelite is connected to the commutators, eliminating wear and tear on connectors. It is furnished in various sizes according to the length and size of cable required.

Reelite

Reelites are featured for their work in keeping cords out of the way, clean and unkinked, facilitating the movements of the car bodies and trucks. Portable hand lamps and extension lamps are made instantly available, within the arm's reach through use of this equipment, and the use of the reelite is thus offered to aid in the lighting arrangements of plants, factories or shops.

Ferro Machine and Foundry Company

PUMPS

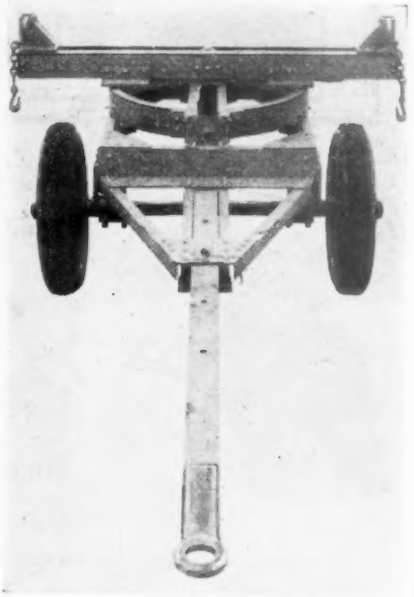
The Ferro Machine & Foundry Company is exhibiting the three types of rotary gasoline pumps which it is supplying to manufacturers of gasoline meter dispensing systems. The three pumps exhibited are of the high-speed type, direct-driven by electric motors. Power is transmitted to the pump shaft through a flexible fabrikoid coupling. Stuffing box is the spring type, and is made for hand tightening.

Pumping action is secured through the use of eccentric rotors floating on the drive shaft. These rotors are at exactly opposite positions so that the combined flow from the two is equal at all times. A film of liquid between rotors and rotor-chamber walls prevents metal-to-metal contact and assures long life of the hardened parts.

Blades of hardened tool steel bearing against the rotors are practically the only metal-to-metal contact while the pump is in operation. These blades are kept in contact by a piston cushioned against the pressure of liquid, and passing on this pressure through a rocker arm.

One of the exclusive features of the Ferro pump is its built-in relief valve. This valve is kept closed by a coiled spring, and is set to open at 15 pounds pressure. Closing action is damped by a grooved piston working in a dash-pot which is part of the valve unit. The slow closing action of the valve positively eliminates chatter. The relief point of the valve is easily changed by an adjusting screw, and the whole valve may be taken out if desired.

Gasoline is strained at the intake by a 50-mesh screen automatically seated and held in position by a spring. Incoming gasoline flows from outside to inside of the screen so that sediment collects on the outside, drops down and is easily cleaned out. By removing the retaining nut the screen instantly comes out.



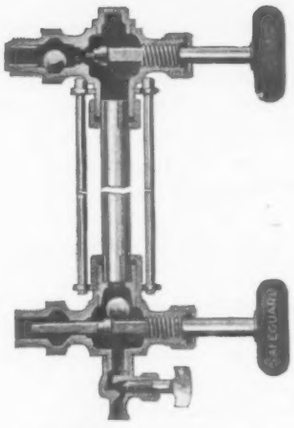
Ferro pumps can be taken apart with a wrench and screwdriver, and can be reassembled by the average station attendant without difficulty.

Fruehauf Trailer Company

OIL FIELD TRAILER

The Fruehauf Trailer Company, Detroit, is featuring at its exhibit a two-wheel trailer especially designed for oil field use. It is equipped with pneumattic balloon tires, steel braced frame work and a four-point adjustable hitch-tongue. The accompanying photograph illustrates this oil field trailer.

The LEADERSHIP of PENBERTHY PRODUCTS



Safeguard Automatic Liquid Level Gauge

Navy Type Liquid Level Gauge

Gas Engine Lubricator

Snap Lever Oiler

THE leadership of Penberthy Products is the inevitable result of years of conscientious effort to put better materials and a greater measure of skill in their manufacture.

Penberthy Products are known throughout the oil fields for their higher efficiency, greater dependability and longer life.

When you specify Penberthy Products you not only get the best but you save money in the long run. You can get Penberthy Products at your local supply house.

Screw Plunger Grease Cup

Spring Compression Grease Cup

Plain Compression Grease Cup

Plain Brass Oil Cup

PENBERTHY INJECTOR COMPANY

ESTABLISHED IN 1886 — DETROIT — CANADIAN PLANT WINDSOR, ONT.

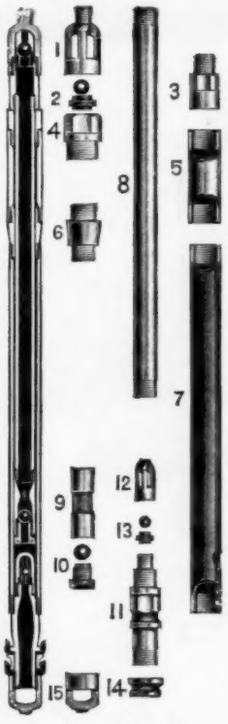
Charles N. Hough Manufacturing Company

PUMPING EQUIPMENT

The Charles N. Hough Manufacturing Company is exhibiting its line of pumping equipment as follows:

Steel working barrels, made to A. P. I. standards, and chromium plated working barrels are on display. The chromium plating is used as a resistant to abrasion, corrosion and erosion. The coating is approximately one-thousandth of an inch thick.

The Lewis plunger liner, also on display, is the inserted type of working barrel. It seats on top of the old working barrel. The liner may be pulled and replaced complete with sucker rods. The barrel and plunger are made of seamless cold drawn steel. There are no cups and the polished steel plunger works through the stuffing box packed with braided cotton rope packing. Both valves are closed together on completion of the down stroke to prevent troublesome gas pockets.



The Polished rod liner on display consists of a brass tube, hexagon top bronze stuffing box, and a cast iron grip stuffing box. The brass tube, which works through the stuffing box, slips over a regular polished rod, and is adjusted, and held in place by the grip stuffing box at the upper end. It is kept tight against pressure encountered. It may be used on pitted or scored polished rod without detriment, according to the makers.

Hough balls and seats on display include the "bronzex," "steelex," "repelex," and "combinex," each made for a particular condition. "Steelex" an alloy steel, for sand; "Bronzex," a bronze alloy for salt water; "Repelex," a stainless steel, for acid; and "Combinex," "Steelex" seat and "Bronzex" ball, for lodestone. The diameters of the seats are ground to close limits and each ball and seat is ground together.

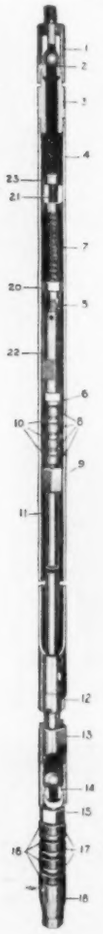
Protex all steel upper valve's body and valve bottom are made in one piece. The cup rings and cups are put on the body from the top. The lock nut securely holds the cups in the correct position and at the required tension. It is made to prevent loss of cups and cup rings which occur when the bottom of the regular valve becomes unscrewed.

The Huf-Duo pump comes complete, ready to screw on sucker rods. It sets on top of the old working barrel, or tubing seats may be used in new wells. The outer tube is the traveling part of the pump. The plunger valve has four composition cups and hydraulic packing. The cups are inverted to prevent the sand from accumulating and cutting them out. The hydraulic packing is kept expanded to the side walls of the outer tube by the plunger valve spring.

The Hough extension lower valve fitted with oversize ball and seat, consists of a steel coupling made of solid bar stock, a seamless steel nipple, an inserted steel crown made of solid bar stock and the "Steelex" ball and seat. It screws into the lower coupling and fits any make of working barrel.

The Hough working barrel valves of various types are shown in all steel, all bronze or steel and bronze combinations. All steel valve parts are made from high manganese steel. Bronze valve parts are made of a bronze alloy of high tensile strength.

The Excelex sucker rod socket is an

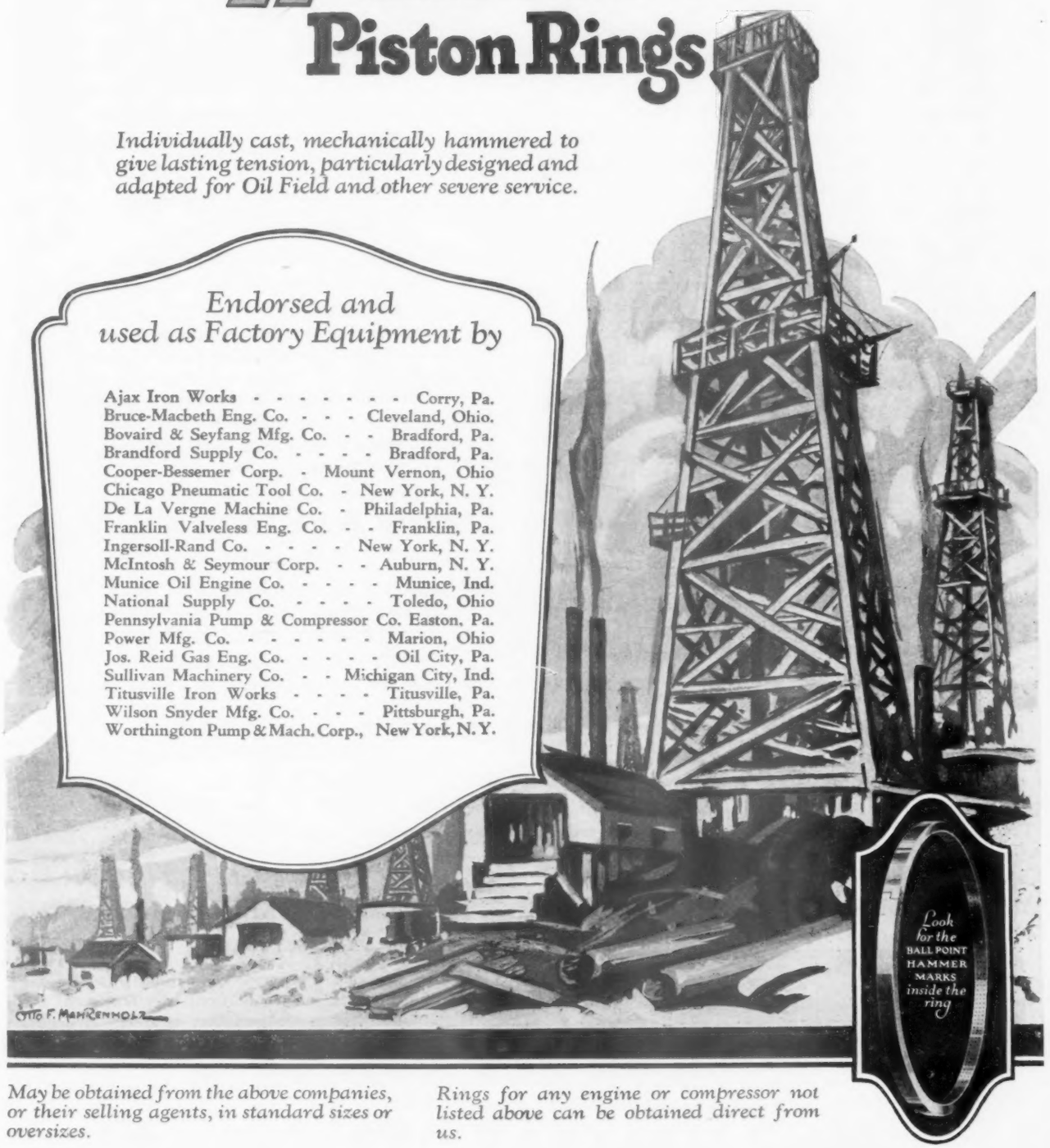


American Hammered Piston Rings

Individually cast, mechanically hammered to give lasting tension, particularly designed and adapted for Oil Field and other severe service.

Endorsed and used as Factory Equipment by

Ajax Iron Works - - - - - - - - Corry, Pa.
Bruce-Macbeth Eng. Co. - - - Cleveland, Ohio.
Bovaird & Seyfang Mfg. Co. - - Bradford, Pa.
Brandford Supply Co. - - - - - Bradford, Pa.
Cooper-Bessemer Corp. - Mount Vernon, Ohio
Chicago Pneumatic Tool Co. - New York, N. Y.
De La Vergne Machine Co. - Philadelphia, Pa.
Franklin Valveless Eng. Co. - - Franklin, Pa.
Ingersoll-Rand Co. - - - - New York, N. Y.
McIntosh & Seymour Corp. - - Auburn, N. Y.
Munice Oil Engine Co. - - - - Munice, Ind.
National Supply Co. - - - - Toledo, Ohio
Pennsylvania Pump & Compressor Co. Easton, Pa.
Power Mfg. Co. - - - - - - - Marion, Ohio
Jos. Reid Gas Eng. Co. - - - - Oil City, Pa.
Sullivan Machinery Co. - - Michigan City, Ind.
Titusville Iron Works - - - - Titusville, Pa.
Wilson Snyder Mfg. Co. - - - Pittsburgh, Pa.
Worthington Pump & Mach. Corp., New York, N. Y.



May be obtained from the above companies, or their selling agents, in standard sizes or oversizes.

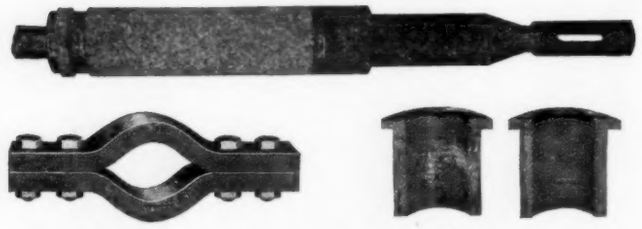
Rings for any engine or compressor not listed above can be obtained direct from us.

The American Hammered Piston Ring Co. Baltimore, Md.

automatic device for catching broken sucker rods. The unit is in three sections, the sub, sleeve and the slip. The sub has a fishing neck which provides means to pick up the socket should the pin be broken off. The slip is one piece and has a drilled hole in the upper end slightly smaller than the diameter of the rod it is intended to catch. As the rod enters the socket it raises the slip until the upper face of the slip comes in contact with the lower face of the socket sub, when the jaws of the slip are caused to expand and the rod passes through until it contacts with the upper end of the drilled hole in the socket sub. When the socket is raised, the slip is pulled down into the tapered section of the sleeve, causing the jaws of the slip to contract and firmly grip the engaged sucker rod.

The company has a new patented working barrel on display for the first time, the Huf-Carlberg liner working barrel, which is similar in design to the Huf-Duo pump. It is designed so that the packing on the plunger valve can be expanded while the working barrel is in operation, and without moving the valve out of the stroke where it has been working.

Robinson Packer Company



Air Packer, together with Clamp and Tubing Slips for same

The Robinson Packer Company, whose factory is located at Coffeyville, Kansas, and executive office at Tulsa, is displaying the following equipment: The Smith-Sawyer air packer, the special bottom hole packer, and the rubber cup packer.

SMITH-SAWYER AIR PACKER

This packer is designed to set in the shot hole where it is desired to increase production of other wells by the use of either air or gas. When the packer is set it is pulled up against the shoulder of the shot hole. A clamp and tubing slip is furnished to hold packer against the shoulder.

This packer is easy to pull or set.

BOTTOM HOLE PACKER

This packer is made to pack as close to the bottom of the hole as possible to prevent water from going around the string of casing.

RUBBER CUP PACKER

The Rubber Cup Packer is used to prevent water from entering the sand from a leaky casing.

Rubber Cup Packer with and without Rubber

This packer is run on tubing and set below the leak in the casing. The weight of the fluid above holds the rubber cup in contact with the casing preventing any leakage by the packer. This packer is equipped with a gas escape which may be plugged if there is not an excess of gas to be handled.

The very fact that it is easy to run or pull has made it a very desirable packer for leaky casing conditions.

The White Company

HEAVY DUTY TRUCK

A heavy duty truck, White model 59-SW, designed especially for work in the oil fields, will be exhibited by The White Company of Cleveland.

This model is equipped with special auxiliary transmission and tower for driving a silent hoist company winch. It is powered with a 100 horsepower engine and is equipped with ten 40 x 8 pneumatic tires and six-wheel air operated brakes.

The gross rating for the chassis is 40,000 pounds and the wheel base is 215 inches.

Indiana Truck Corporation, Inc.

TRACTOR

The Indiana Truck Corporation, Inc., Tulsa, is featuring the Indiana Model 300T, one and one-half ton six cylinder tractor chassis, complete with Fruehof drop end trailer and Davis tank, complete with attachments.

Capacity of this unit has a rated pay load of 3000 pounds with total gross weight allowable 8600 pounds.

Wheelbase is 137-inch standard, 149-inch long. The truck is equipped with 32x6 pneumatic cord tires, front and rear.

Gear ratio is 5.85 to one. The four speed selective type transmission is mounted in a unit with the motor.

The frame is of pressed steel construction, 5⅝-inch deep, one-quarter-inch thick.

Tulsa Rolling Mills Company

STEEL BARS

The Tulsa Rolling Mills Company's exhibit shows, as far as is possible under display conditions, the results of the various steps taken in the manufacture of steel. It begins with the raw material and the many ingredients necessary for the refinement of the metal and proceeds through the several stages of pouring and rolling operations to the finished product.

The products displayed in connection with the above exhibit consists of forging billets and blooms, re-inforcing bars, merchat bars, and other like items of the company's line.

Why Set Casing Before You Know?

CLOSED
Patented and Patents Pending

A *Safe* Tester and Why . . . .

Covered by patents in the United States, Venezuela and Mexico, with other patents pending.

No spudding or rotating necessary to open or close. Make up and break out your drill stem with the rotary.

Cannot be opened by hydrostatic pressure — run any depth desired. (See top valve. Impossible to open until the operator is ready.)

Circulation can be had through tester at any point desired, going in or coming out.

Tester can be spudded through a tight place or bridge without fluid entering the drill stem.

Enclosed perforations — impossible to plug tool.

Proof of Safety and Efficiency

Data on our patents available to the legal department of any oil company. Already accepted by many leading companies as satisfactory.

An examination of the cross sections illustrated herein will satisfy the engineering department of any oil company on the absolute safety and practicability of the JOHNSTON Formation tester.

Hundreds of holes have been tested with uniform success, saving the industry hundreds of thousands of dollars worth of casing and resulting in the discovery of five new fields, all without a single mishap. Tests made at absolutely any depth.

In substantiation of any statements herein, we offer a list of our customers to any responsible party. Send for it.

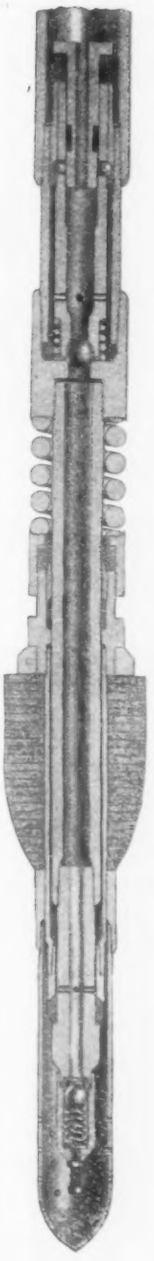
Literature on Request

We have an illustrated circular, going somewhat into details of mechanical construction and operation, which we will be glad to send on request.

FOR LEASE
Per Test $150
Per Well $500

FOR SALE
In Foreign Countries Only

See Us At The
EXPOSITION



OPEN
Patented and Patents Pending

JOHNSTON
FORMATION TESTING CORP.

HOUSTON, TEXAS
West Building

EL DORADO, ARK.
Exchange Bank Bldg.

SHREVEPORT, LA.
618 Lake Street

C. M. Heeter, Sons & Company, Inc.

PUMP SPECIALTIES

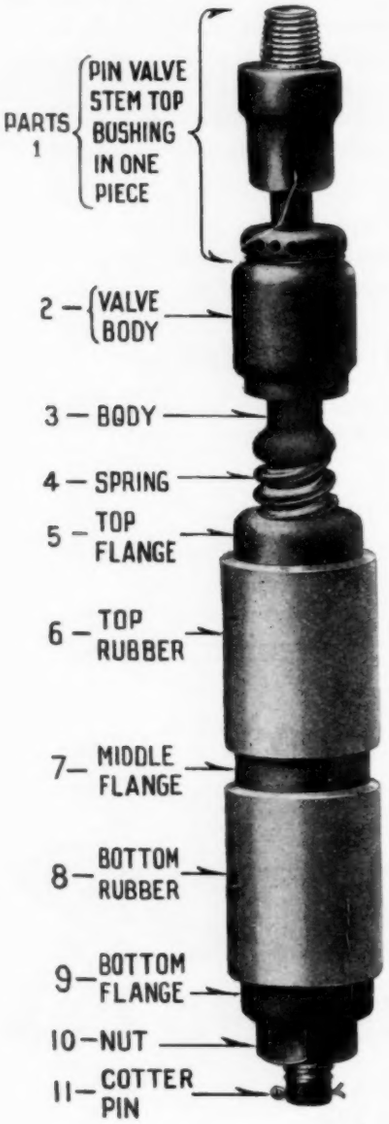
The C. M. Heeter, Sons & Company, Inc., Butler Pennsylvania, is exhibiting a complete line of pump specialties.

SWAB

Heeter's improved swab, with a new style pin and valve stem in one piece, is used to get the oil production, to swab the oil and water down below the casing to prevent collapsing when shooting the well, to swab oil out of the tubing to save the oil before pulling the tubing, to swab water or oil out of the tubing and casing in gas wells, or to produce the oil by swabbing it out of the tubing.

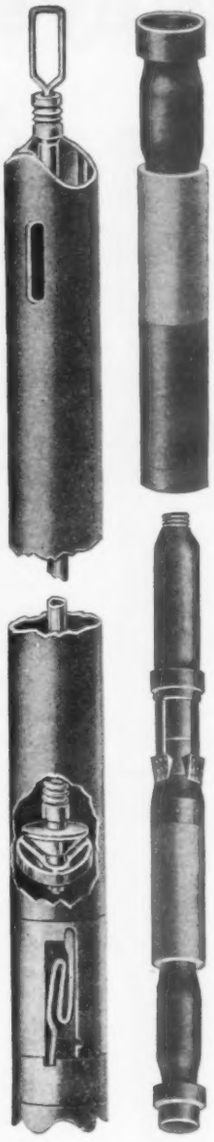
SAND PUMP

The Heeter sand pump is used to remove the sand or sediment when drilling, cleaning out, or drilling out iron or wood, when the hole is full of fluid. It has a rotative fastener to connect the bottom to the tube, making a tight joint and taking loose motion up as it wears. This pump is 28 feet long, has a very large opening, a tapered sucker and open top and is designed to sink fast. There are no projections on the outside.


PARTS 1 PIN VALVE STEM TOP BUSHING IN ONE PIECE
2 — VALVE BODY
3 — BODY
4 — SPRING
5 — TOP FLANGE
6 — TOP RUBBER
7 — MIDDLE FLANGE
8 — BOTTOM RUBBER
9 — BOTTOM FLANGE
10 — NUT
11 — COTTER PIN

COMBINATION ANCHOR AND PACKER

The company is showing its improved patented combination anchor and wall tubing gas packer which is used on tubing to case off any water above the gas producing sand. It is set by weight of the tubing. It will not set until the screws shear off in the slip band, and the cone sets down in the slip.



CASING ANCHOR PACKER

This packer is set on the bottom of the hole, the weight of the casing setting it. It should not be lifted after it is set due to possibilites of destroying the rubber. It is provided with a conical sleeve to increase the body of the packer. It is used on casing any distance from the bottom to place the packer in a good wall to case off water. It is designed to carry 400 feet of anchor.

TUBING ANCHOR GAS PACKER

Heeter's improved patented tubing anchor gas packer is used on tubing to case off any water or oil above the gas producing sand. The weight of the tubing sets it as does the casing anchor packer, and the features are similar except for relative sizes.

HOOK WALL PACKER

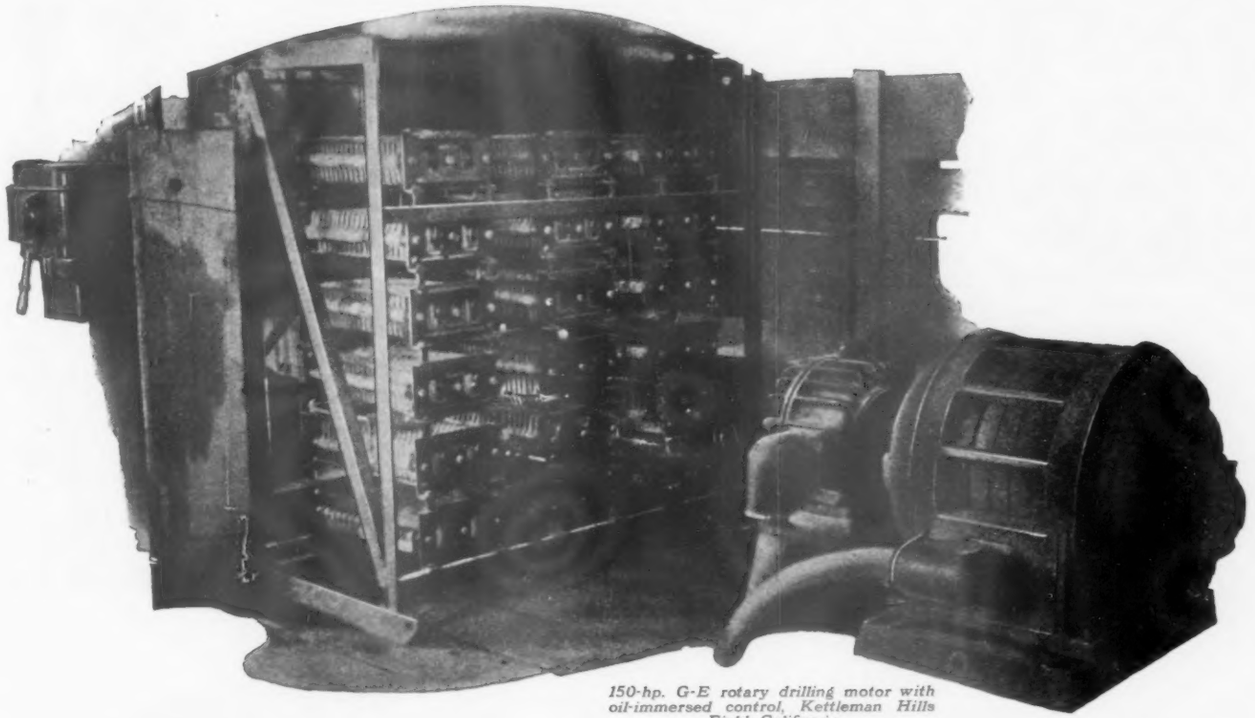
This packer is much like the above two packers in use. It is lowered to within 16 inches of the point of setting, turned slightly more than one turn to the left, then lowered on the tubing until the slips hold the weight.

FLOW CATCHER

The Heeter patented flow catcher is put on the casing head to put the oil in the tank if the well flows through the casing, when running in or pulling tubing. It also is used to keep the vacuum on gas pump wells when pulling or running tubing.

PIPE GRIP

The Heeter improved pipe grip is used for setting up and unscrew-



150-hp. G-E rotary drilling motor with oil-immersed control, Kettleman Hills Field, California

For Gassy Wells

In gassy territory, this G-E rotary drilling equipment is safer, because the magnetic control is oil-immersed and the collector rings of the motor are specially enclosed.

The magnetic control automatically operates to give maximum starting torque and fast acceleration with minimum line disturbance and minimum heating of the motor.

The nearest G-E office will tell you how you can use G-E Motorized Power to reduce operating expenses, save time in rigging, reduce the amount of material to be moved from one location to another, and obviate water bills.

General Electric supplies complete electric equipment to the oil industry. With warehouse facilities close to your operations, G.E. readily furnishes motors, controllers, transformers, arresters and other protective devices, capacitors for power-factor improvement, switching equipment, etc.

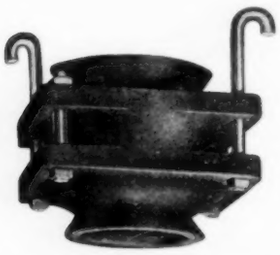
G-E oil field specialists at: Dallas, Denver, Houston, Kansas City, Oklahoma City, Tulsa, Los Angeles, San Francisco.

GE Motorized Power
–fitted to every need

200-304

GENERAL ELECTRIC

GENERAL ELECTRIC COMPANY, SCHENECTADY N. Y., SALES OFFICES IN PRINCIPAL CITIES



ing casing. It is made to catch all sizes of casing and tubing. The dogs can be renewed, and the horn is wide to make it easy on the rope.

FISHING TOOLS

Heeter's improved patented corrugated friction socket shown here is used to recover lost tools from a well. The corrugations in this socket are made to swedge out somewhat after being run a number of times, but not to impair the hold to any great extent.

Oklahoma Iron Works

CASING HEAD

Oklahoma Iron Works, Tulsa, is displaying a number of new and improved items at its exhibit this year.

The Wright forged steel casing head and split casing ring is designed to withstand extremely high gas pressure

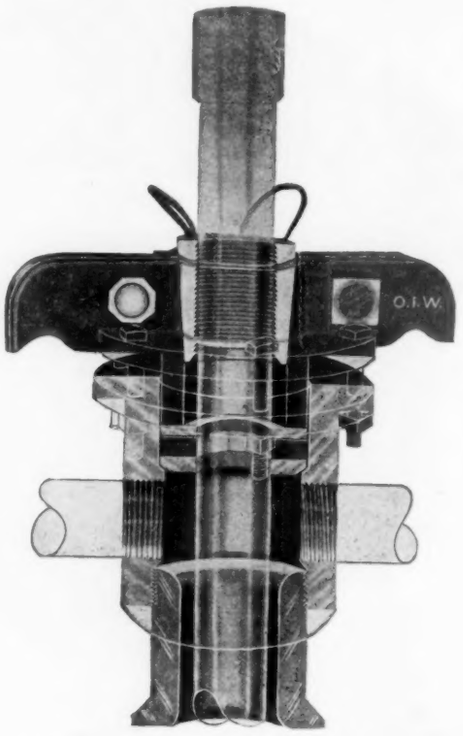
and to support the casing in the deepest wells today. The bowl is forged and turned from a solid steel billet and may be built to fit any size casing with any desired outlet.

SPLIT CASING RING

The combination split casing ring top and gland is made of very heavy steel casting, dovetailed and bolted together similar to the regular split casing ring. This member supports the inner string of casing by means of four forged steel slips or wedges, and at the bottom is machined to form a gland which rests on the steel and lead packing in this bowl. Either rubber or hydraulic packing may be used instead of lead as a packing element.

WIRE LINE CLAMP

The Taylor Mildren wire line drilling clamp employs a different principle of leverage, using the toggle joint principle instead of the modified hinge.



The Taylor automatic casing spider is correctly designed and sufficiently strong to handle casing in the deepest wells with ease and safety. The slips work on dovetailed guides in the side of the bowl, making for the proper raising and lowering of the slips, and enabling the spider itself to do the work of back-up tongs as soon as the string is sufficiently heavy to prevent the pipe turning in the slips.

TRAVELING BLOCK

The heavy Dewey 72-inch traveling block is designed to run with the Cromier crown block, the sheaves and bearings in the traveling block being interchangeable with those in the Cromier crown block. However, the traveling block may be used in connection with any conventional crown block. This block is built with either four or five 39-inch diameter alloy steel pulleys, mounted on roller bearings upon a 12-inch center pin. The body of the block is fitted with an ordinary beckett, or may be fitted up directly with an Oklahoma Iron Works swivel hook.

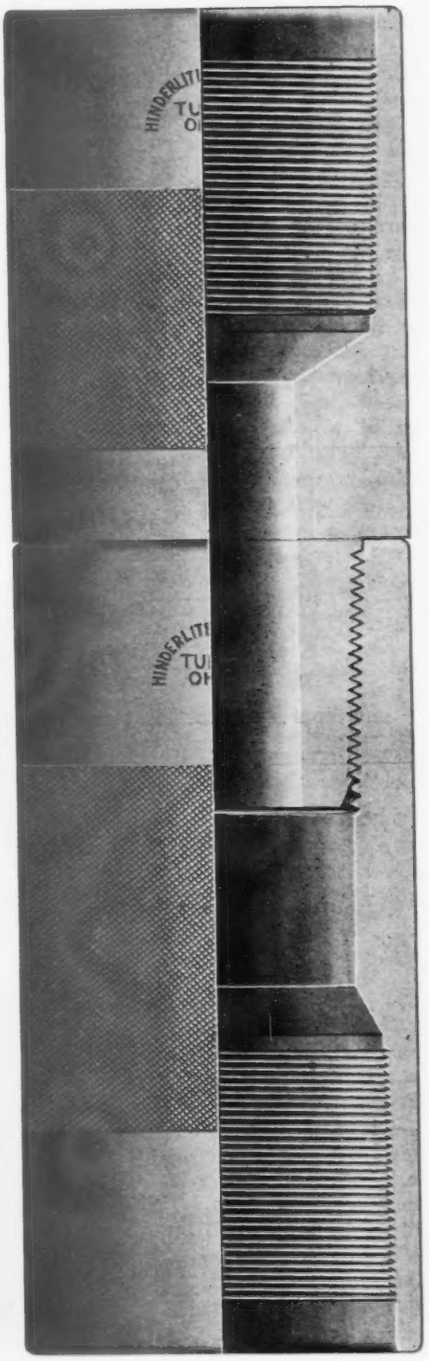
HINDERLITER Rotary Tool Joints

• • • every thread the same

• • • heat treated 'n everything

Our real excuse for being in the Oil Field Equipment Business is to make

HONEST TOOLS



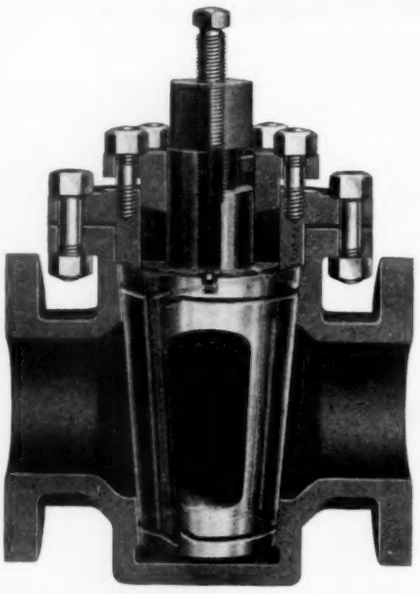
DRILLING AND FISHING TOOLS — HINDERLITER TOOL COMPANY — ROTARY AND STANDARD CABLE

Barco Manufacturing Company

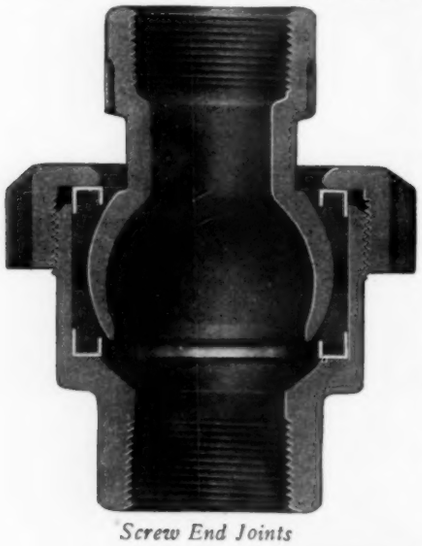
VALVES

The Barco Manufacturing Company, Chicago, is this year featuring the flange end lubricated plug valves, the screw end joint and the flange end joint.

The flange end lubricated plug valves are designed for air, gas, gasoline, oil, steam, water, tar and other fluids. They offer the advantage of full port opening with one-quarter turn of the handle or wrench. The fit between the plug and body is perfect to the point that the lubricant is not relied upon to make a tight seat. The lubricant is used to prevent wear and to make valves work easily. The packing gland may be removed and the valve repacked without danger of the plug blowing out. They are available in practically all types and sizes, and valves of special materials are made for acids and alkalies and other services where iron or steel is not suitable.



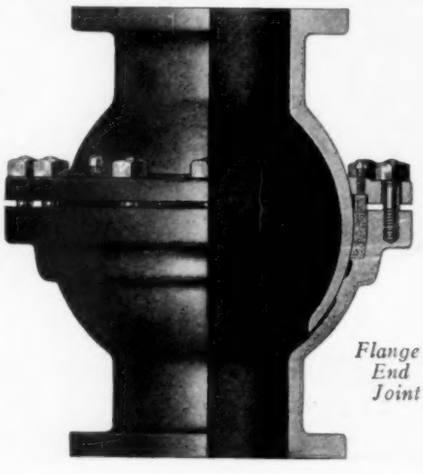
Lubricated Plug Valve



Screw End Joints

JOINTS

Barco joints are furnished with flanged ends, faced and drilled, or faced only, in sizes from four to 48-inch inclusive. They are used on sand suckers, dredges, water works piping, hydraulic lines. They are designed to be equally tight under suction or pressure, and are suitable for all liquids, including oil, air, water, steam and gases. The gaskets in these joints are stated to be suitable for practically all purposes for which metal joints can be used.



Flange End Joint

C. H. Wheeler Manufacturing Company

The C. H. Wheeler Manufacturing Company, Philadelphia, is exhibiting items of each of the following lines:

Steam jet booster, barometric, ejector, gasoline, jet, oil, reflux, sectional and surface condensers; gas, oil and water coolers, heat exchangers; air, gas and liquid heaters; expansion joints; centrifugal, steam, vacuum, and vacuum steam jet pumps; cooling towers, and atmospheric relief valves.

Turbo-Mixer Corporation

The Turbo-Mixer Corporation is exhibiting the turbo-mixer. It consists of a centrifugal impeller surrounded by stationary deflecting blades to prevent the swirl of the liquid in the tank. The turbo-mixer is particularly adapted to handling viscous materials.

Some of the features of this equipment are as follows:

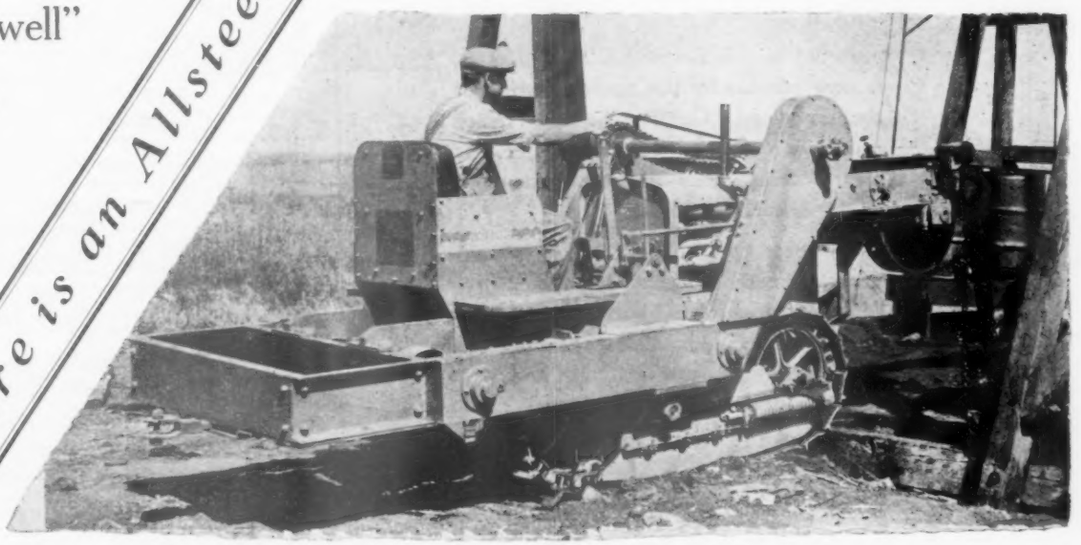
The impeller and ring, made of polished aluminum iron and bronze, may be easily cleaned and the mixer may be raised or lowered by means of a hand wheel and can be operated at any level in the tank. It swings in a complete circle around a central post, permitting mixing in any position. There is a stationary deflecting blade ring to prevent rotating impeller from coming in contact with the sides or bottom of the tank. The drive-shaft is designed to be oil-tight to prevent leakage from the material being mixed. All moving parts are enclosed to promote safety and cleanliness.

INSURED PRODUCTION

There is an Allsteel winch for every depth well

Model FA-15 Allsteel Winch

An Allsteel Winch is your insurance against loss of production when your wells are down for repairs. It can be gotten to a well because it's mounted on a "Caterpillar." It will "pull the well" because it's Allsteel.



MOUNTED ON MODEL FIFTEEN "CATERPILLAR" TRACTOR.

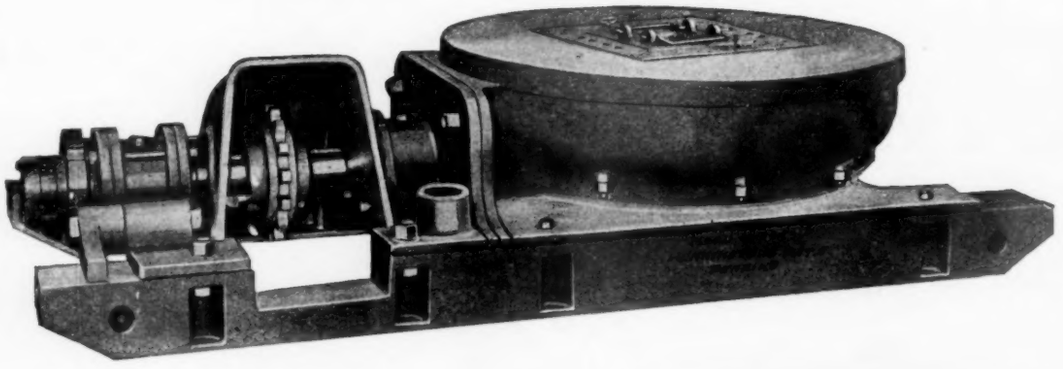
Cable Address
"CARDKELT"
Use Bentley's Code.

Allsteel Products Mfg. Co.

231 W. English,
Wichita, Kansas

Makers of high grade auxiliary oil field equipment for "Caterpillar" Tractors

The New "Gumbo Buster" *Rotary* Runs in a Bath of Oil



The "Gumbo Buster" line of rotary drilling machinery is manufactured by the American Well and Prospecting Company, the first manufacturer of rotary drilling equipment, who make a complete line of light and heavy rotary machinery of latest design.

A 26" Roller Bearing Oilbath Rotary is now offered by the manufacturers of the renowned "Gumbo Buster" line of rotary machinery. Its superiority has created tremendous and instant demand in the deeper oil fields.

The new Oilbath design assures constant lubrication of gears and cones, prevents entrance of all foreign matter to these parts, eliminates all "whipping" in rough drilling, insures reliable and economical service.

The superiority of the "Gumbo Buster" Oilbath rotary is based upon the following novel and sound principles of design and construction:

1. All steel rotary including skids.
2. Inside hold-down, constantly lubricated, forms a radial bearing for table, holding it in exact concentric rotation. In rough drilling this bearing takes the tooth load of pinion on table gear. These features afford even, smooth, quiet rotation.
3. Both pinion boxes are in one casting and are not adjustable, assuring proper alignment at all times of the four Hyatt Roller Bearings (two in each box) and proper engagement of teeth on ring gear.
4. 4¾" pinion shaft runs in four Hyatt Roller Bearings.
5. Gear teeth are forged, cut, hardened and shrunk on master wheel.
6. Convenient locking device on end of pinion shaft.

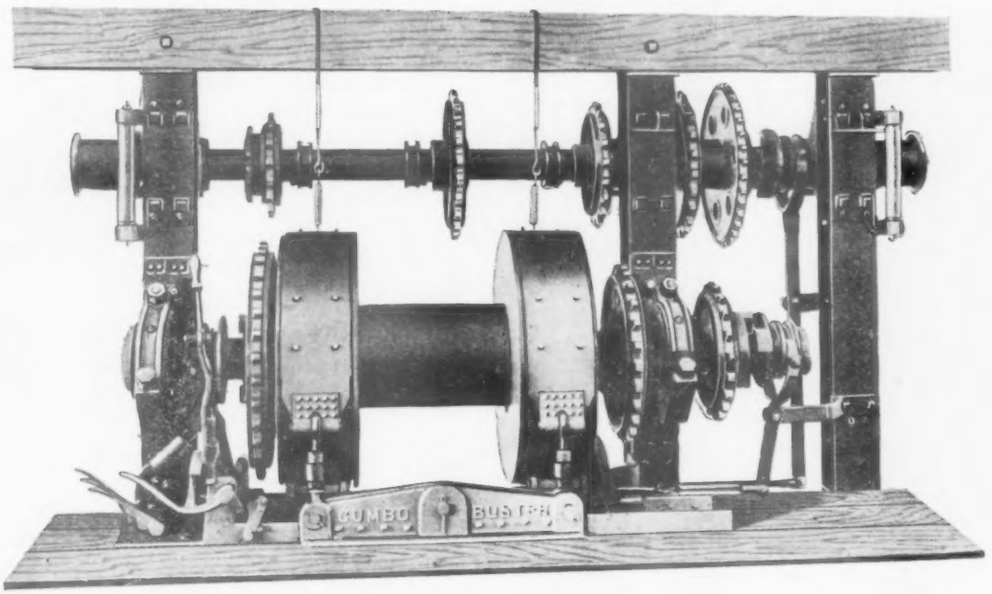
Pages 10 to 14 of Composite Catalog of Oil Field and Pipe Line Equipment illustrate part of "Gumbo Buster" Line.
Write for full information.

Republic Supply Company

OIL AND GAS WELL SUPPLIES
Cable and Rotary Tools

GENERAL OFFICES: HOUSTON, TEXAS

ONE MAN
Can Handle Long Strings of Pipe
With this new Compounded Brake



"GUMBO BUSTER" Roller Bearing Draw Works

This newly designed roller bearing draw works has a new brake on which the leverage is compounded 2½ to 1. The brake bands are 13″ wide and are equalized. The compound leverage and wide equalized brake bands increase the life of the brake linings, and enable one man to easily handle long strings of pipe. ALL CLUTCHES are operated from driller's position by conveniently located foot pedals.

1. 7″ Line Shaft and 8″ Drum Shaft of heat treated steel.
2. Drum operates on two large roller bearings enclosed in two self-aligning bearing housings.
3. All brake and clutch shifting rigging mounted on one base, which can be moved as a unit, facilitating setting up draw works, assuring proper rigid assembly.
4. Cat Line Rollers are extra large in diameter and operate on roller bearings.
5. Clutch blocks and sprockets of chrome nickel steel; clutch blocks heat treated; heavy steel Jack Posts.

Republic Supply Company

OIL AND GAS WELL SUPPLIES
Cable and Rotary Tools

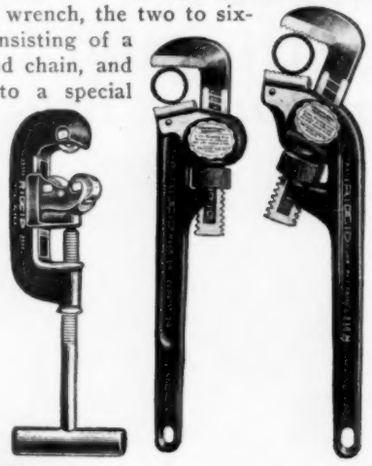
GENERAL OFFICES: HOUSTON, TEXAS

Ridge Tool Company

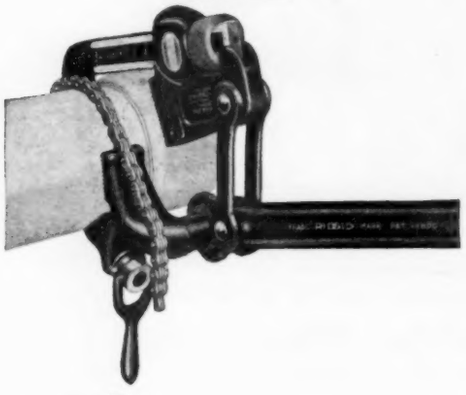
PIPE TOOLS

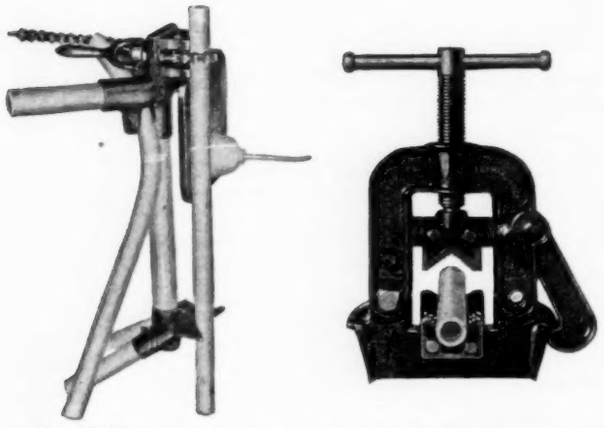
Ridge Tool Company, Elyria, Ohio, is displaying a complete line of its pipe wrenches and tools as follows:

The rigid super-six is featured for its leverage qualities, which allows one man to tighten six-inch pipe without help or to loosen rusted joints. The leverage qualities lie in the construction of the wrench, the two to six-inch pipe capacities consisting of a trunnion with teeth and chain, and a housing connected to a special handle no longer than a 36-inch pipe wrench.



Ridge Tool Company's hook jaw is made of tool steel. An adjusting nut rides free in an opening housing, allowing the full hand to grip the nut. It is made in sizes from six to 60 inches.





The rigid end wrench for coil work is featured in its easy accessability in tight places, as in coil. It offers a one-hand adjustment, and all parts are interchangeable with a straight wrench.

On the rigid super-four wrench the trunnion and wrench are separate. The former fastens on the pipe, the jaw of the wrench is placed on the fitting or pipe, and the hole in handle slips on the trunnion. The super-four uses standard 36-inch wrench parts.

Rigid bench vises, post vises, vise stands, chain bench vises, kit vises, chain post vises and chain vise stand are also on exhibit.

C. J. Tagliabue Manufacturing Company

SCIENTIFIC INSTRUMENTS

The C. J. Tagliabue Manufacturing Company, Brooklyn, is displaying a complete line of instruments for indicating, recording and controlling pressures, temperatures and other properties.

The growth of this company's line from the original Tagliabue instruments made in 1864 to the present modern precision instruments is being shown by representatives at this exhibit.

Macwhyte Company

WIRE ROPE

The Macwhyte Company, Kenosha, Wisconsin, is displaying a Macwhyte one-inch 6 x 19 drilling cable, wire rope sample board and literature on wire lines.

In addition to its booth, the Macwhyte Company is furnishing the International Derrick & Equipment Company with one 1350 foot 1⅛-inch 6 x 19 Macwhyte Monarch Whyte strand "Wycore" rotary line for drilling, which is shown in connection with the IDECO display.

Modern Engineering Company

WELDING AND CUTTING EQUIPMENT

Modern Engineering Company, St. Louis, is featuring this year the MECO super X torch along with a complete line of the company's welding and cutting equipment, which will be demonstrated.

The new welding torch is designed for a handy working size with sufficient capacity to handle any of the oil field welder's jobs. It offers three styles of welding tips, four different angle cuttings, and any angle welding head is procurable through the company.

Allegheny Steel Company

TUBING

The Allegheny Steel Company, Brackenridge, Pennsylvania, is exhibiting a line of tubing, including the Allegheny metal seamless tubing, mechanical tubing, condensor tubes, working barrel tubes and the like.

The company is featuring its recent development in the use of alloys now extensively used in the oil storage and refining processes.

On exhibition also is Ascoloy 33 sheets shown in various forms of interest in the industry.

The company is also displaying Allegheny metal sheets, plates, bars and castings.

Broderick & Bascom Rope Company

WIRE ROPE

The Broderick & Bascom Rope Company is displaying a large revolving sample board, containing the various sizes and grades of rope used in the oil fields.

Samples in the form of short cuts from the company's wire rope products are shown on tables in the booth, and a large nickle plated carving set, made of the Yellow Strand Powersteel Wire Rope, is being featured to show the quality of the material used in the manufacture of the wire rope.

A fancy fence around the booth is also made of the Yellow Strand Powersteel Rope of the company.

"For every joint on every line"

Pipe installation costs and line operating costs are both lower when you use Victaulic pipe couplings.

Supplied for all sizes of steel, wrought iron and cast iron pipe from 3/4 inch up—for all pressures. For full information, write or mail the coupon.

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

"For every joint on every line"

FLEXIBLE LEAK-PROOF

VICTAULIC

REG U S PAT OFF

PIPE COUPLINGS

For detailed information on uses, users, installations, prices and specifications, fill in and mail the coupon.

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GENERAL STEEL PRODUCTS CO.,
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Ohio—CASE HARDENING SERVICE CO., Cleveland, Ohio

VICTAULIC COMPANY OF AMERICA
26 Broadway New York

Please send Victaulic Bulletin No. 8

Name.....

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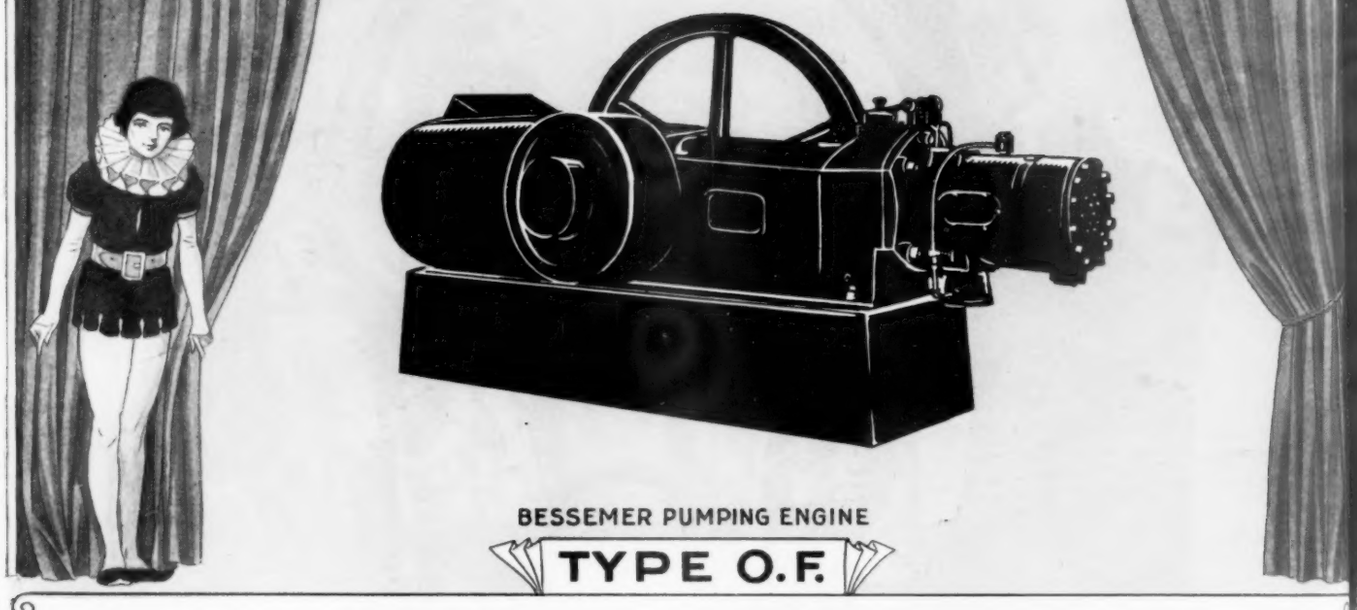
FOR CRUDE OIL GAS WATER SEWAGE COMPRESSED AIR ETC.

And They All Replied— "A Better Clutch!"



BESSEMER PUMPING ENGINE

TYPE O.F.

"WHAT is the most needed improvement in pumping engines?" we asked engineers, superintendents and operators in the field. The answer was nearly unanimous—"A better clutch!"

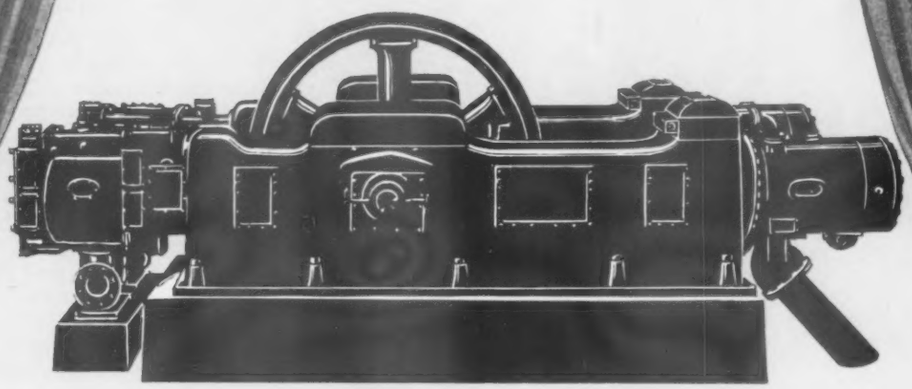
A new clutch—the result of months of engineering research—is now in production. Because of its radically different principle it has changed the design of the pumping engine itself. The new Bessemer Type-O. F. neither looks nor is like the old model.

Some of the new clutch features are: the complete enclosure of shifting mechanism and its oil bath lubrication; maintenance of neutral position by centrifugal balance; positive and unfailing release of opposite clutch motion; elimination of misalignment by making all bearings part of a rigid unit; close support of belt pulley on Timken roller bearings.

See this new engine and clutch at the Tulsa Exposition or ask one of our representatives for further information.

CLOOPER

Have You Heard About The New Bessemer Type-10?



BESSEMER ENGINE COMPRESSOR

TYPE 10

COOPER-BESSEMER engineers in their constant search for engine improvements decided that several important changes would overcome certain difficulties discovered in the old model Bessemer Type-10 engine compressor unit.

Some of the changes which have made this a NEW Bessemer Type-10 are: a one piece bed; a full water jacket from cylinder end to end, and improved water circulation; increased exhaust and inlet port capacity and wider bridges; greater scavenging valve capacity; improved type piston and cylinder head; and better lubrication for exhaust bridges.

Built with a Bessemer gas economizer, this new Type-10 has fuel economy comparable to a four-cycle engine.

See this new engine at the Tulsa Exposition or call in one of our representatives for complete information.

THE COOPER-BESSEMER CORPORATION

Formerly The C. & G. Cooper Co. and The Bessemer Gas Engine Co.

Mount Vernon, Ohio Grove City, Pennsylvania

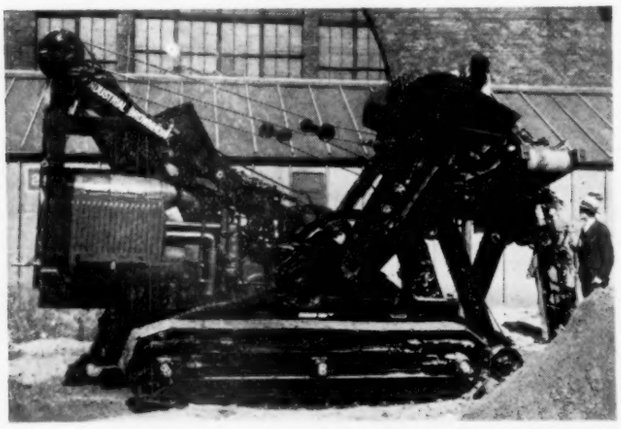
Branch offices in all principal oil and gas fields

BESSEMER

Industrial Brownhoist Corporation

TOPPING PONY-DITCHER

Industrial Brownhoist Corporation is featuring the topping pony-ditcher, which offers self-cleaning excavator buckets, electrically welded steel frames, and dirtproof ball bearings that roll in oil on all high speed gears and shafts.



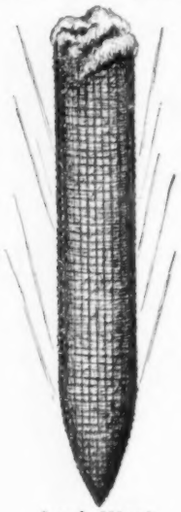
Brownhoist Ditcher

The pony-ditcher also has a low traveling height and center of gravity with a superior design of crawler mounting. The simplicity of control of the pony-ditcher makes it possible for unskilled hands to run it, being equipped with safety appliances which guard against accidents or breakdowns caused by carelessness or lack of experience on the part of the operator. Some of these features include an automatic boom hoist clutch release, a locking device which holds the boom in raised position and eliminates the possibility of it jarring down, and the use of friction clutches which may be set at any tension, allowing them to slip before any part of the machine breaks.

Eagle-Picher Lead Company

LEAD AND WOOL CONTAINERS

Eagle-Picher Lead Company, general offices at 134 North La Salle Street, Chicago, has on exhibit, among other products, its lead wool and lead wool containers.



Lead Wool Cartridge

Eagle lead wool, chemically pure 100 per cent. lead, is wirelike in texture and each strand is separate and distinct. When placed in the bottom of a well it forms a perfect plug, shutting off bottom water. Tamping the lead wool forces it into the irregularities of the wall of the hole.

A special cartridge or container into which the lead wool is conveniently packed, has been developed. The container dropped into the well, after being filled with the correct amount of lead wool, is easily tamped under pressure. Eagle containers come in a range of sizes varying from three to nine inches in diameter; they can be used in casings ranging from four and one-half to 10 inches in diameter. Each cartridge is 36 inches long. The amount of lead wool needed to fill a cartridge varies from 25 to 100 pounds, depending upon its size.

The strands of Eagle lead wool are twisted into rope about three-quarters of an inch in diameter so that it can be coiled and packed for shipment. It can be uncoiled and any desired amount can be used. Eagle lead wool is shipped in moisture proof burlap sacks weighing 50 pounds.

The use of Eagle lead wool containers and a description of Eagle lead wool is completely described in two folders which may be had by writing the Eagle-Picher Lead Company.

Chicago Pneumatic Tool Company

"TUCONE" ROCK BIT

Chicago Pneumatic Tool Company, whose general offices are located at 6 East 44th Street, New York City, has recently perfected the new CP "Tucone" rock bit. It is placed on the market generally after numerous tests by producing companies for proof of its speed, low maintenance cost, the eliminating of reaming and the production of a straighter hole.

"Tucone" Rock Bit

The new bit represents the culmination of five years of research and experimental work, including an expenditure of more than one million dollars. It is being exhibited for the first time at the exposition at Tulsa.

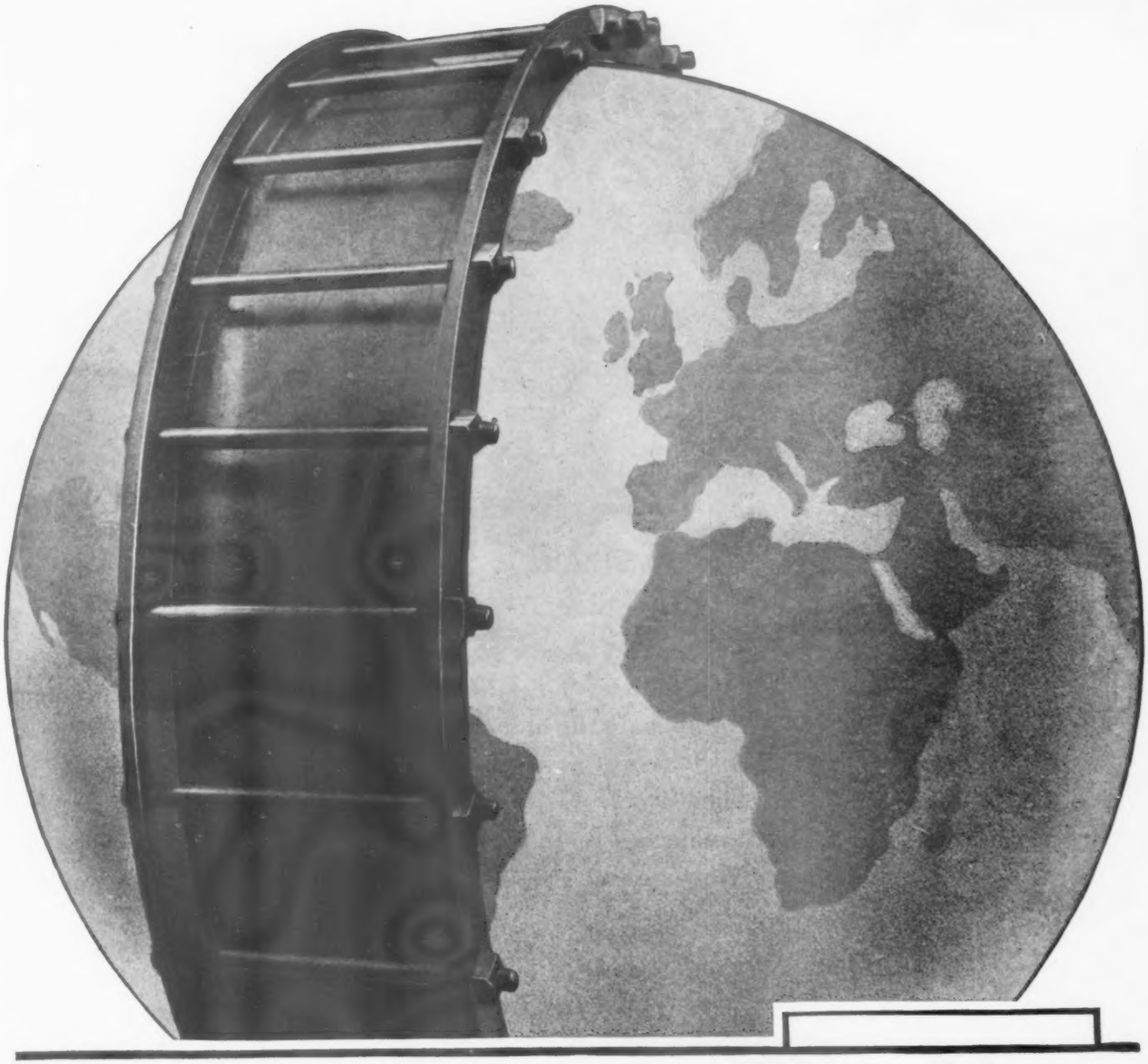
The accompanying illustration shows the general construction. The bit consists of a one-piece manganese steel casting bit body. The construction of the reamer body is such as to permit the placing of the three separate reamer cutters at the proper distance for best alignment and efficient, according to the manufacturer. These reamer cutters, made from chrome nickel steel, heat-treated and hardened, rotate on a bearing held in the reamer body by a bearing pin. Thus, any wear caused by reaming action falls on the reamer cutters and bearings, which are easily and economically replaced. The manufacturer stresses the absence of wear on the reamer body itself, and therefore an absence of a loss of gauge. The bit carries two cutting cones separated to a scientifically determined degree so that the fluid stream will impinge directly on the bottom of the hole.

The feature designed to alleviate crooked holes is the absence of obstruction of the fluid stream, thereby eliminating side-wall hydraulicking and pressure exerted upon the sides of the hole to cause side-hole washouts to lead the bit from a true course.

The two cutting cones, which are so inserted as to stand the brunt of the drilling action and thus protect the bit body itself, are each mounted on a large bearing, making a unit which is held in the bit by a body washer, nut, lock nut and cotter pin; all of which are removable. The cutting cone and its bearings are one unit and are not sold separately. when a cone is worn, the unit is removed and sent to a licensed Chicago Pneumatic service station where the worn cone is stripped from its bearing and a new factory made cone refitted on the same bearing.

The new bit is now on production, and shortly delivery will begin on various sizes from 5⅝-inch to 17¼-inch. The first two rows of teeth are painted a bright red and are known as the "CP Red Head Cones."

The company's address given above will furnish further information and an illustrated and descriptive folder upon request.



Wherever there are Pipe Lines

DRESSER COUPLINGS DOMINATE

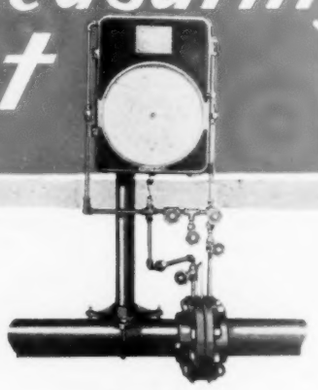
Dresser Couplings Are Uniform in Material, Workmanship and Size

Dresser Lines Are Bottle Tight — Absolutely and Permanently

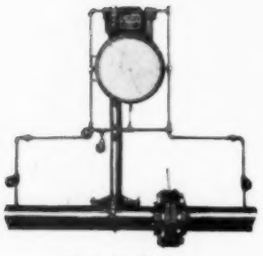
S. R. DRESSER MANUFACTURING CO.
BRADFORD, PA.

Complete Oil and Gas Measuring Equipment

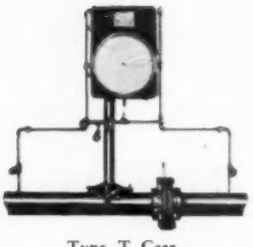
Type B Case
Flange Connections



Type T Case
Flange Connections

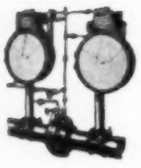


Type B Case
2½ and 8 Diameter
Connections



Type T Case
2½ and 8 Diameter
Connections

Refinery Meter
Installation



Combined Installation
For Measuring Variable Rates of Flow.

Metric Meters meet the varying requirements of measurement throughout the industry of oil and gas production. The completeness of products leaves no unfilled gaps. Any stage of handling from production to consumption that is not encompassed by the three main divisions of Metrics—Orifice, Ironcase and Tin—is provided for in special meters and apparatus.

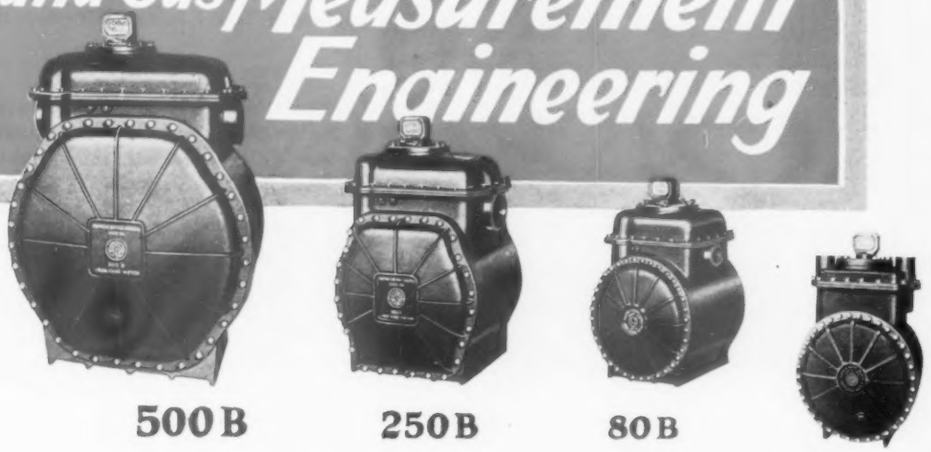
Complete, reliable, original information describing each type of meter is assembled in many forms of Metric publications. The educational, instructional, descriptive and operating data made available to these industries by Metric parallels the products of Metric in width of scope. The valuable experience of extensive manufacturing from pioneering days to the present is always available.

The rewards of faithful research have been many. They have extended far. The vast betterments originating at *headquarters for gas measurement engineering* have profited, directly and indirectly the whole structure of gas-oil commerce.

AMERICAN METER CO
MEASUREMENT ENGINEERS
CUBIC FEET

METRIC

Headquarters of Oil and Gas Measurement Engineering



500B 250B 80B 60B

35B

30B

25B

20B

10B

5B

In solving the intricate problems of measuring gas and oil in any quantities, under all commercial conditions, Metric has performed a remarkable amount of resultful research. New meters to answer new conditions; better meters to overcome obstacles to accuracy; special apparatus for extending the use of measurement principles to every nook and cranny where need for measurement exists—all such achievements have been born in the research laboratories of Metric Metal Works and the affiliated companies of American Meter Company, Inc., which operate continuously and co-operatively year after year for the advancement of the art.

Listed below are a few of our products which are of chief importance to gas and oil interests:

Westcott Orifice Meters	Curb Meters	American Calorimeters
Linderman Orifice Meters	Wet Test Meters	Cubic Foot Bottles
Ironcase Meters	Demonstration Dry Meters	Specific Gravity Apparatus
Tin Gas Meters	Portable Test Meters	Siphon or "U" Gauges
Demand Limiting Meters	Gas Demand Meters	Meter Provers

Metric Metal Works *of* American Meter Company, Inc.

ERIE, PENNSYLVANIA

METERS

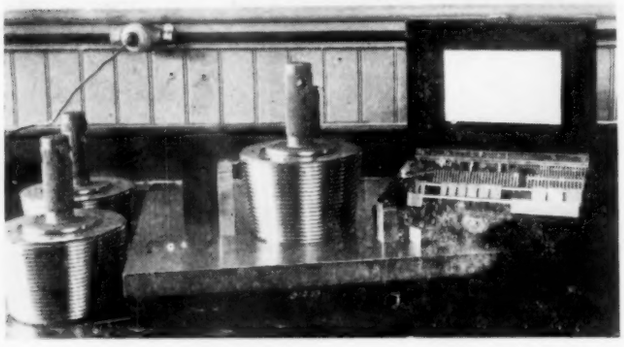
AMERICAN METER CO
MEASUREMENT ENGINEERS
CUBIC FEET

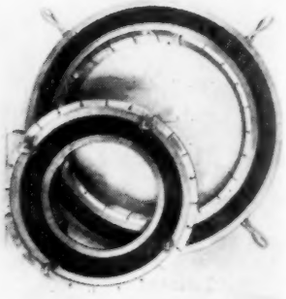
Pratt and Whitney Company

GAGES

Pratt & Whitney Company of Hartford, Connecticut, is exhibiting a line of oil country gages, both master and working. The method of guaging couplings is being demonstrated, showing Kinite bench plugs, designed for long service.

Rotary taper joint gages representing the grand master





gages, regional master gages, reference master gages and working gages are being displayed. The function of these products are being explained and the method shown of the interchange of reference gages which is necessary to insure the uniformity of the product. A demonstration of working gages showing the acceptance or rejection of taper joint threads is also being given.

Working gages for cable drilling tool joints and a suggested set of some of the uses to which these can be put is being demonstrated.

A super micrometer is included which is capable of measuring in ten thousandths of an inch up to eight inches.

American LaFrance and Foamite Corporation

FIRE FIGHTING EQUIPMENT

American LaFrance and Foamite Corporation, Elmira, New York, has a comprehensive exhibit of chemical fire fighting equipment including the following:

Six cylinder Alfite (carbon dioxide) gas system, equipped with lowe release; Alfite 7½- and 15-pound hand extinguishers; 50-pound Alfite cylinder; one type CA2½- gallon Foamite extinguisher; one type DCC Foamite five-gallon extinguisher; one "Childs" 2½-gallon extinguisher; one type FM Foamite 40-gallon engine; several different models of carbon-tetrachloride fire-guns and, a display of pure air and gas masks.

In addition, an important feature of the American-La-France and Foamite exhibit will be the display of Foamite generators. Three types will be shown, models 15, 25 and 30.

Fort Worth Well Machinery & Supply Company

DRILLING MACHINES

The Fort Worth Well Machinery & Supply Company, Fort Worth, is showing two models of the Fort Worth spudder, Model J and the super H model. These machines are equipped with Zerk lubrication system throughout.

MODEL J

Model J has a 90-inch band wheel diameter with a 15-inch base, the height of the top mast sheave is 48 feet, has a drilling capacity of 3500 feet and weighs approximately 29,500 pounds. The cable spooling capacity with tool drum ¾-inch line is 8475 feet, with tool drum ⅞-inch line is 6000 feet, with ½-inch sand reel line is 5000 feet and with 9/16-inch sand reel line is 4000 feet.

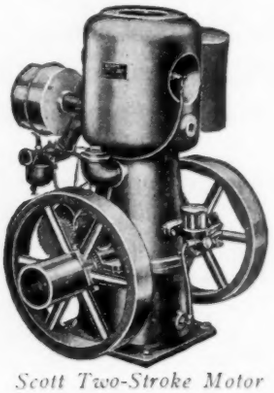
SUPER H MODEL

Height of the top mast sheeve of the Super H machine is 40 feet, the diameter of the band wheel is 72 inches, the face of the band wheel is 12 inches, the conservative drilling capacity is 2000 feet, and the approximate weight is 18,750 pounds. The cable spooling capacity of the super H model with tool drum ⅝-inch line is 4770 feet, with tool drum ¾-inch line is 3380 feet, with tool drum ⅞-inch line is 2500 feet, with sand reel ½-inch line is 4080 feet, and with sand reel 9/16-inch line is 3180 feet.

Scott Two-Stroke Motor Company

TWO-STROKE MOTOR

The Scott Two-Stroke Motor Company, Kansas City, Missouri, is featuring the newly perfected two-stroke motor, which offers an unusual design. It is composed of a specially designed hollow piston with port arrangement in the piston and cylinder block, a stationery set-in head, piston pin, connecting rod and crank shaft.



Scott Two-Stroke Motor

It is termed a piston valve motor, firing every revolution of the crank shaft. The moving parts in the piston communicate with the stationary parts in the cylinder block, opening and closing with a sliding movement.

The lower chamber inside the hollow piston is the suction and supply chamber and the upper chamber is the compressing and firing chamber. Both chambers handle gas. This design was made to eliminate all crank case gas, crank case compression or displacement. It is further designed to create a positive measured action for each charge without leakage or adulteration of fuel.

There are no valves, valve springs, tappetts, rollers, triggers, cam-shafts nor gears, no oil cups nor grease cups.

for

DEPENDABLE TWENTY-FOUR HOUR PIPE SETTING AND WATER SHUT-OFF CEMENT

PRESTOLITH VELO CEMENT

MISSOURI PORTLAND CEMENT CO.

ST. LOUIS KANSAS CITY MEMPHIS

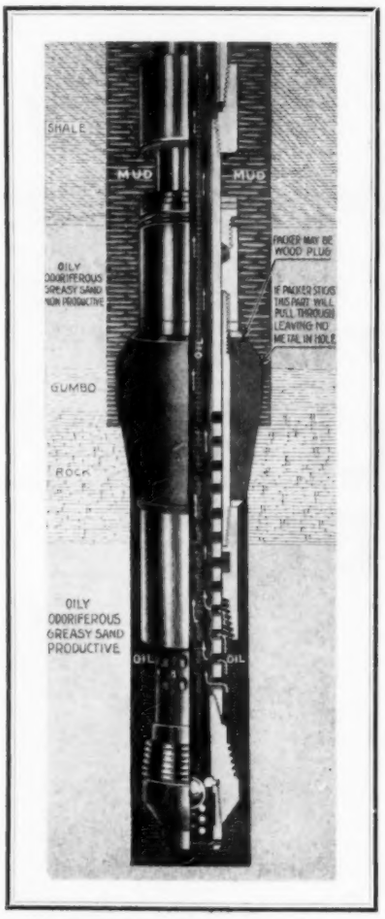
Manufacturers of Red Ring Portland Cement for more than a quarter of a century. Write for complete literature.

SEE *and* INSPECT

these famous tools
at the
International Petroleum Exposition

THE five famous tools illustrated and described on this and the following page will be on display at the International Petroleum Exposition, October 5th to 12th. They will be exhibited on the ground of the W-K-M Company, Inc., Houston, Texas, exclusive distributors. They are manufactured by the Houston Engineers, Inc., Houston, Texas. They are: The W-K-M—H. E. Flow Tester; the W-K-M—H. E. Cut-and-Pull Casing Cutter; the W-K-M—H. E. Reversing Tool; the W-K-M—H. E. Releasing Spear, and the W-K-M—H. E. Releasing Overshot.

Each of these important tools is a leader in its particular field, and has behind it a long record of highly successful performance.



This Device Fully Protected by Patents

Flow Tester

W-K-M—H. E. Flow Testers are made in three types, to test all formations, under all conditions. There is the Rat-Hole Type, the Open-Hole Type, and the Combination Double Packer Type, for testing rotten formations.

The Rat-Hole Type Tester, most popularly used, is the only tool of its kind which can be rotated throughout the test. Moreover, it is the only Tester which can be spudded during the test. Spudding and rotating in the rat hole frequently agitates the formation sufficiently to bring in a showing, even after a still test has failed. This is a very important feature of W-K-M—H. E. Rat Hole Type Testers.

In coming out of the hole, upon completion of the test, the W-K-M—H. E. Testers permit free circulation of mud, thus preventing the tool from sticking. Packers on all W-K-M—H. E. Testers are arranged so that should the tool stick they can be stripped off without leaving any metal in the hole. No W-K-M—H. E. Tester has ever been lost in the hole.

All three types of testers will be displayed at the Exposition. Be sure to examine them carefully, and to have their features explained to you in detail.

Casing Cutters

This Device Fully Protected by Patents

The W-K-M—H. E. Cut-and-Pull Casing Cutter is the only inside casing cutter with which a cut can be made and the cut pipe pulled from the hole with a single trip of the drill stem. In addition, it is one of the very few tools through which circulation can be maintained.

When the tool has been lowered in the casing, and the cutting point reached, an upward strain is taken on the drill stem. This sets the slips, and relieves the weight of the drill pipe and the casing to be cut from the cutting knives. The cut is then made by rotating the drill stem. When the cut is completed, the operator is positively notified by the pumps, which are automatically shut down. Inward and outward movement of the cutter knives which are of high-speed tool steel is controlled by pump pressure.

Frequently two or three, or more cuts can be made and all of them withdrawn from the well with a single trip of the tool. This is possible because there are no triggers which require hand-setting after the tool has been set. It can be picked up from the original setting,

and run again; or, it can be lowered and run again. It is, probably, the most versatile casing cutter on the market today.

Reversing Tool

On fishing jobs, the W-K-M—H. E. Reversing Tool entirely eliminates the necessity of a string of left hand thread pipe. Attached to the regular drill stem, and rotated to the right at the top coupling, it imparts a left hand motion to tools attached below its bottom coupling. For unscrewing stuck drill pipe and recovering it from the hole, it has no equal.

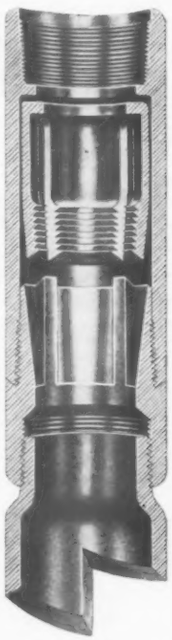
Patented

To operate the tool, a suitable male (tapered) or female (box) tap of the right size to engage the stuck pipe is attached to the lower end of the reversing tool. Lower tool on drill stem until tap engages fish. Rotate slowly to right, which opens wings and sets dogs in casing. Continue rotating to right, which makes up tap on fish. When fish is tightly gripped, drill stem is lifted to take all weight of fish down to joint to be unscrewed. After wings are engaged, the lower part of tool with the tap will rotate to the left one turn for each five turns of the drill stem to the right. When stuck pipe is unscrewed, there will be a slight upward jump on the drill stem.

This tool has been used with excellent success on hundreds of the most difficult fishing jobs, and has saved its users thousands of dollars.

Releasing Overshot

The W-K-M—H. E. Releasing Overshot is a simple, safe tool to run. If, after grappling the fish with one of these overshots it can not be budged, the tool can quickly and positively be released and other methods tried. No danger of sticking a fishing string in the hole because the overshot can not be released from its hold on the fish.

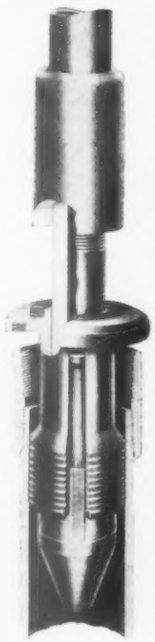


Patented

Releasing of W-K-M—H. E. Overshots is accomplished by a very simple mechanical principle. The tapered bowl in which the slips work has four releasing keys cut integrally with the bowl. When it is desired to release the Overshot, the drill stem is lowered a few inches, rotated one-eighth turn to place the keys under the ends of the slips, and then pulled up. The keys immediately release the hold of the slips, and the tool may be withdrawn from the hole. Made in all sizes, for both pipe and couplings.

Releasing Spears

Like W-K-M—H. E. Overshots, the complete line of W-K-M—H. E. Releasing Spears can be released from their hold on a fish at the will of the operator. Slip releasing keys are cut integrally with the tapered mandrel of the tool, and when it is desired to release the tool the stem can be dropped a few inches, rotated one-eighth turn to the right and picked up. This operation places the releasing keys under the slips, and breaks out their hold on the fish.



Patented

Unique and exclusive features of W-K-M—H. E. Releasing Spears assist considerably in successfully handling difficult fishing jobs. The Hydraulic Ram Releasing Spear, shown herewith, can be used to give a terrific expanding impact to stuck pipe. This is done by running the pumps full force, and then setting down quickly with the drill stem. The flange of the spear is forced down on top of the fish, cutting off circulation instantly. The fish is thus made to breath, or expand, an operation which frequently loosens and permits it to be pulled without further difficulty. This is an exclusive feature of the W-K-M—H. E. Releasing Spear.

Made in all sizes and several types, W-K-M—H. E. Releasing Spears will do the job when others can not touch it. Examine them carefully at the Exposition, and check for yourself their many outstanding features.

Complete Information on these tools sent on request

Manufactured by

Houston Engineers, Inc.

HOUSTON, TEXAS

P. O. Box 276

Exclusive Export Distributors

W-K-M Company, Inc.

HOUSTON, TEXAS

Export Office, 74 Trinity Place

New York, N. Y.

Day Phone: Preston 1927—Night Phone: Taylor 1996

Regan Forge & Engineering Company

CROWN BLOCK

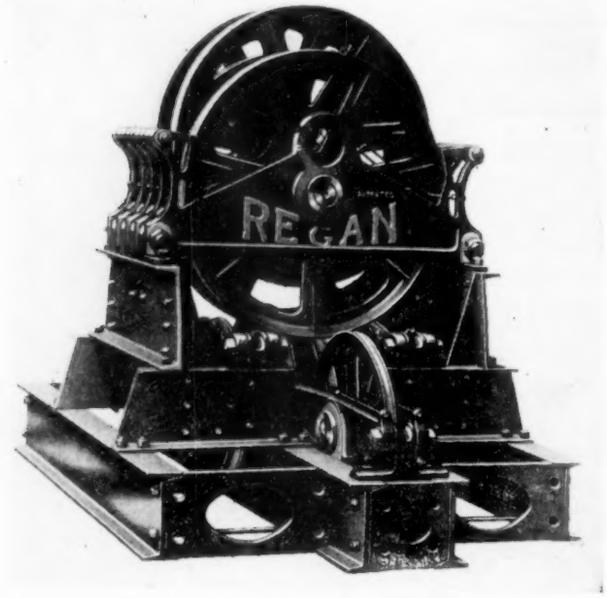
Regan Traveling Block

Regan Forge & Engineering Company, Los Angeles, is featuring the five - sheave type B Regan crown block from which is suspended a 76-inch new type four-sheave Regan traveling block, an eight-inch Regan hook and a six-inch Regan swivel string-up as in actual operation. The Lee C. Moore Company has the top 40 foot section of a derrick within the Regan Forge & Engineering Company's exhibit, and the Regan equipment is shown in connection with this set-up. A Regan eight-sheave type A crown block, a new 76-inch five - sheave traveling block, a 63-inch four-sheave traveling block and a 54-inch three-sheave traveling block shown on a platform representing a derrick floor.

SPRING CASING HOOK

An improved type of spring casing hook is being shown for the first time this year. It is made of alloy steel, heat-treated, with the hook bored out. It has considerably more cross-sectional area of metal and much greater weight to handle heavy loads. This type hook has recently been operating in California fields on the world's deepest wells.

Regan Spring Casing Hook



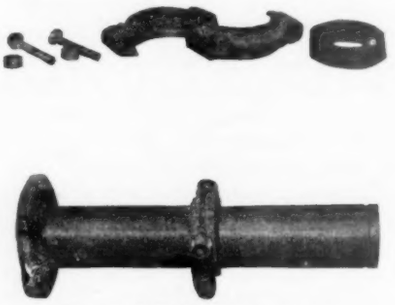
Regan Crown Block

Oil Conservation Engineering Company

PIPE COUPLINGS

The Oil Conservation Engineering Company of Cleveland, Ohio, is featuring the two bolt couplings for pipe carrying oil, gas, steam, water, or acid up to 900 degrees F.

The coupling consist of a split housing, a pair of bolts



Oceco 2-Bolt Couplings

and a packing ring. The housing is of certified malleable iron providing for greater corrosion resistance than steel, and so designed as to provide maximum strength with minimum weight. The standard packing ring is of molded asbestos—proof against oil or temperatures. However other material may be used, if desired, to meet special conditions.

The coupling is quickly assembled by slipping the packing ring over the pipe ends, and bolting the two half housings together over the ring. There are but two bolts to tighten—a wrench is the only tool needed. Unskilled labor cannot misplace the self-centering coupling.

There is sufficient play of the housing in the groove to allow for expansion and contraction of the pipe providing in effect an expansion joint for each length of pipe.

Two minutes with unskilled labor is a good working estimate for the installation of each Oceco coupled joint. Moreover fewer men are required on the job, for stabbing is simplified and there are no tongs to buck.

Oceco coupled lines are easily salvaged and may be taken up and laid in a new location without reconditioning, or a length of pipe may be quickly and easily removed and replaced without disturbing the remainder of the line. Cleaning of the line or coils is both possible and practical.

Jones & Laughlin Steel Corporation

TUBULAR GOODS

The Jones & Laughlin Steel Corporation of Pittsburgh will be represented with an exhibit covering floor space of five regular booths. In this space will be shown sections of all types of oil country tubular goods produced by Jones & Laughlin, including A. P. I. seamless casing, tubing and drill pipe; Woodlawn special seamless, Woodlawn special lapwelded casing, Jones & Laughlin welded line pipe, both with end beveled for welding and with Victaulic joint, and Jones & Laughlin seamless line pipe with bell and spigot joint.

One of the special features of the exhibit will consist of samples taken from Jones & Laughlin seamless mill production, showing the different forms of the steel section through all stages of manufacture. Another part of the exhibit will be made up of samples of piercing points and other tools employed in the making of Jones & Laughlin seamless pipe.

YOU GAIN

in

TIME and MONEY

By Using The

APPLEMAN
Gumbo Bit

3 Appleman Bits drill
3000 feet

(Patent Applied for)

WATER COURSES

Note that water courses lead direct to cutting edge. This design has accomplished a maximum cooling effect. The cuttings are rapidly broken up and washed away in solution thus obviating choking-up.

SELF-SHARPENING EDGES

A principle in the design is that the blades are formed concavely favoring cutting edges for both bottom and side of hole. Attained by hard facing, permitting wear on back to retain cutting edge.

SIDE WALL CUTTING

The cutting edge is so constructed that it cuts side wall as it drills. This feature accomplishes a full round hole and a well prepared side wall. Holds guage longer. This side wall cutting function makes reaming rarely necessary.

Names of prominent users will be mailed upon written request.

B.K.APPLEMAN
BEAUMONT, TEXAS

Ask the Man Who Uses Them

Users of the Appleman Gumbo Bit

Gulf Production Company	Houston, Texas
Humble Oil & Refining Company	Houston, Texas
Shell Petroleum Corporation	St. Louis, Mo.
Sun Oil Company	Beaumont, Texas
Texas Company	Houston, Texas
Sinclair Oil & Gas Company	Houston, Texas
D. B. McDaniel Drilling Company	Houston, Texas
Marrs McLean	Beaumont, Texas
Rexal Petroleum Company	Houston, Texas
Unice Oil Corporation	Houston, Texas
Miller Drilling Company	Fort Worth, Texas
Riner Oil Company	Beaumont, Texas
Carter & Fultz	Houston, Texas
J. V. Redick	Tyler, Texas
Deep Test Oil Company	Beaumont, Texas
Smith & Hayslip	Houston, Texas
R. W. Townley	Houston, Texas
Mills Bennett Production Company	Houston, Texas
Geo. H. Echols	Mirando City, Texas
Hamill Drilling Company	Houston, Texas
Navarra Oil Company	Houston, Texas
Rycade Oil Company	Houston, Texas
Wolf & Laughlin	Houston, Texas
Albert Plummer	Houston, Texas
Bud Coyle	Houston, Texas
Boiling Dome Oil Company	Houston, Texas
H. R. Cullen	Houston, Texas
Cullen & West Production Company	Houston, Texas
Texas Southern Petroleum Company	Rockland, Texas
Vinton Petroleum Company	Ged, La.
Calcasieu Oil Company	Lake Charles, La.
L. Seiss Oil Syndicate	Lake Charles, La.
Moon Oil Company	Vinton, La.
Rex Petroleum Company	Vinton, La.
Harvey & Rush	Houston, Texas
Cranfill & Reynolds	Dallas, Texas
Geo. Bradley	Luling, Texas
Progressive Oil Company	Sulphur, La.
Port City Oil Company	Lake Charles, La.
Joe Davis	Beaumont, Texas
J. G. Sutton	Vinton, La.
Rayborn & Long	Luling, Texas
Baine & Anderson	Houston, Texas
Harrison Oil Company	Houston, Texas
C. A. Tucker	Dallas, Texas
Fort Bend Oil Company	Houston, Texas
Edgerly Petroleum Company	Vinton, La.
United North & South D. Corporation	Luling, Texas
Talbot & Markle	Houston, Texas

APPLEMAN GUMBO BITS can be supplied by the following firms:

Speed & Service Iron Works	Houston, Texas
Continental Supply Company	Houston, Texas; Shreveport, La.; Luling, Texas
Oil Well Supply Company	Houston, Texas; Luling, Texas; Beaumont, Texas
Beaumont Iron Works	Beaumont, Texas
Mission Sales Company	Houston, Texas
T. T. Word Supply Company	Houston, Texas
Ged Iron Works	Ged, La.
Murray Brooks Hardware Company	Lake Charles, La.
Wilson Supply Company	Houston, Texas
Frick-Reid Supply Corporation	Luling, Texas
T. & L. Tool Company	Beaumont, Texas
Spindletop Machine Works	Beaumont, Texas
R. F. Cowan	Refugio, Texas
Trahan & Williams	Luling, Texas
Sour Lake M. & S. Company	Luling, Texas
T. T. Word Supply Company	Houston, Texas
Gulf Coast Iron Works	Barbers Hill, Texas

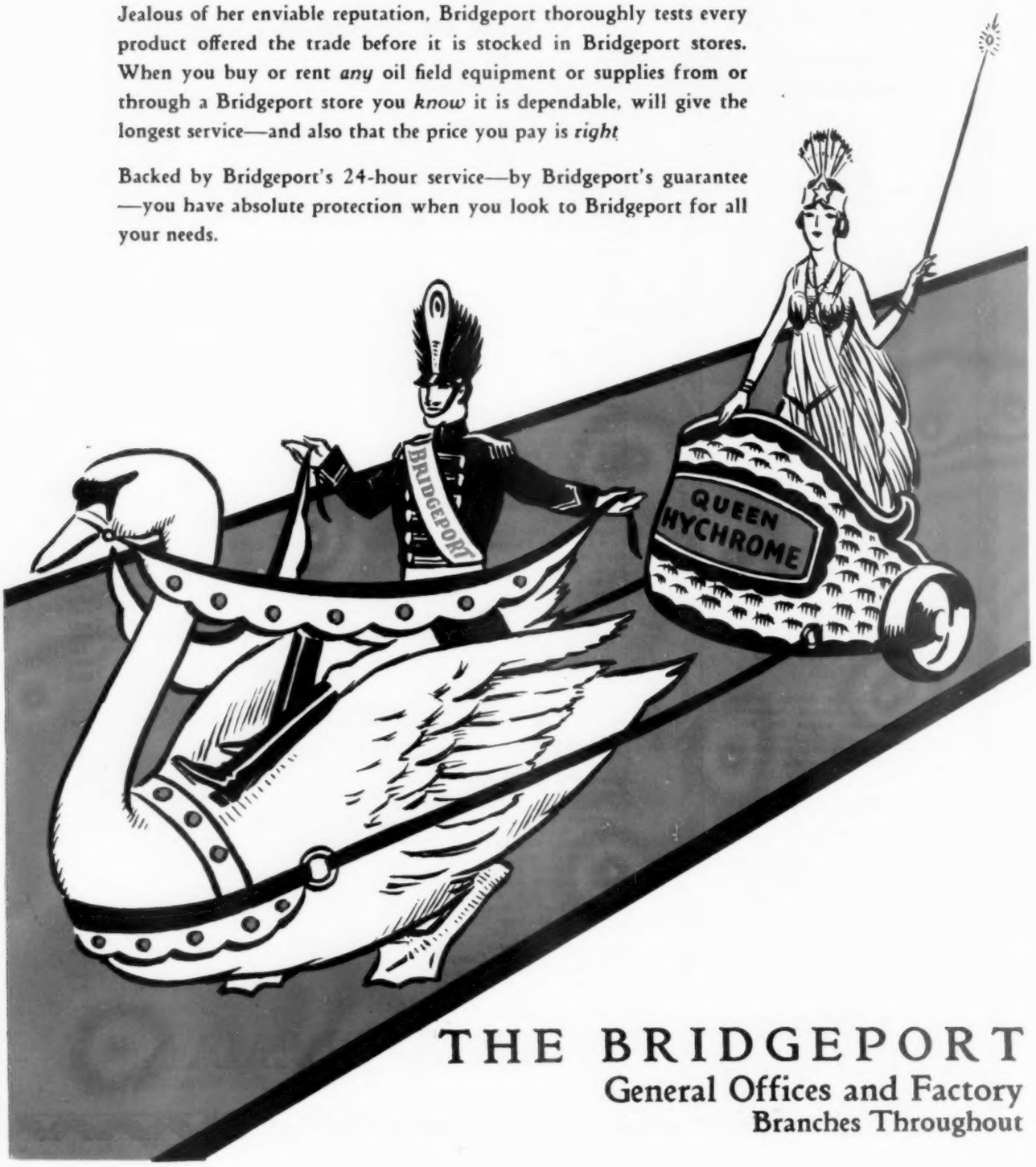
B. K. APPLEMAN

THE BIG

Underneath the Bridgeport Banner are enrolled world-renowned manufacturers of oil field equipment. Makers of proved products, the highest quality produced anywhere.

Jealous of her enviable reputation, Bridgeport thoroughly tests every product offered the trade before it is stocked in Bridgeport stores. When you buy or rent *any* oil field equipment or supplies from or through a Bridgeport store you *know* it is dependable, will give the longest service—and also that the price you pay is *right*

Backed by Bridgeport's 24-hour service—by Bridgeport's guarantee —you have absolute protection when you look to Bridgeport for all your needs.



THE BRIDGEPORT
General Offices and Factory
Branches Throughout

PARADE

Below are the principal leaders in the big Bridgeport Parade—Cable and Rotary oil field equipment and supplies procurable through Bridgeport stores. Better products made by the world's most reputable manufacturers—all enlisted under the Bridgeport Banner, to give you better service—to save you time and money on every job.

We cordially invite visitors to the Petroleum Exposition to visit our Tulsa Store, located at 316-318 East Eleventh Street. Come in any time and learn more of what Bridgeport Service means to you.

Bridgeport Machine Co.
Drilling Tools
Fishing Tools
Hychrome (Guaranteed) Tools
Swan Underreamers
Supplies

Lucey Products Corporation
Rotaries
Pumps
Boilers
Draw Works
Crown Blocks
Engines
Tool-Joints
Traveling Blocks

New York Rubber Corp.
Lagface Belting
Triumph Belting
Duroflex Belting
Wickapee Rotary Hose

Hughes Tool Company
Rock Bits and Cones
Tool Joints
Core Bits
Valves

Williamsport Wire Rope Co.
Drilling Lines
Sand Lines
Casing Lines
Rotary Lines

Allis Chalmers Mfg. Co.
Motors and Generators
Transformers
Texrope Drives
Reduction Units
Speed Reducers
Counter Shafts
Centrifugal Pumps

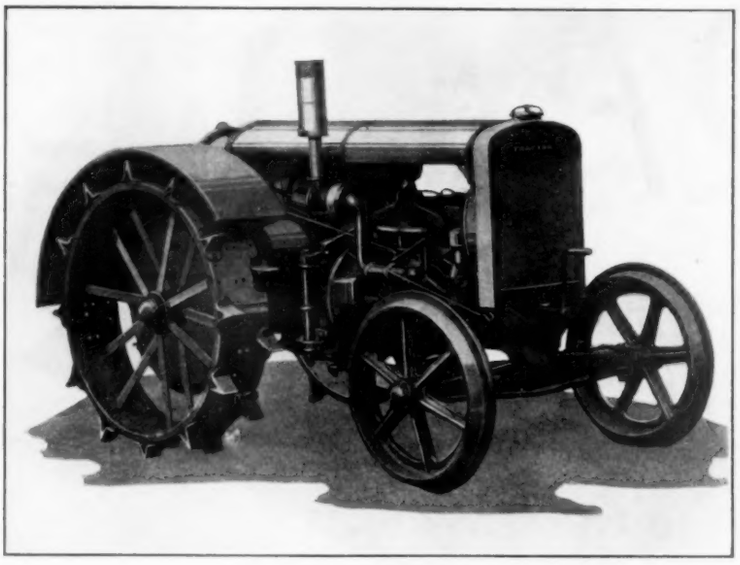
Pittsburgh Steel Products Co.
Casing
Drill Pipe
Line Pipe
Tubing

Wheeling Steel Corporation
Casing
Line Pipe
Tubing

Wright Engine Co.
Wright Gas
Drilling Engines

Wall Rope Co.
Wall Cables
Wall Bull Ropes
Wall Cat Lines

MACHINE COMPANY
Wichita, Kansas
the Oil Fields



DoAll Industrial Tractor

Fred E. Cooper

TRACTORS

Fred E. Cooper, field representative for Rumley Oilpull winch tractors, 18 South Madison Street, Tulsa, is featuring this year the DoAll industrial tractor, capable of handling wells up to approximately 2500 feet. It is designed to eliminate as many working parts as possible to make a practical all-purpose winch tractor for the lease. It is not an oilpull nor is it designed after oilpull ideas or principles, but is made as a companion tractor to be used on lighter work.

The Rumley oilpull winch tractor is a heavy-duty, low-speed, oil-cooled, kerosene burning machine, carrying the improved air cleaner and a larger and more powerful motor.

The stationary winch is the same as the tractor except without the wheels, axels or transmission, having been mounted on a stationary frame. It may be mounted on the back of a truck to handle wells which are widely scattered, where it would not be practical to try to road any tractor.

The portable mast is an ordinary "A" frame mast built of eight-inch heavy channel iron. It is mounted on the Rumley tractor and lies across the top of the tractor during transportation. At the location it is raised in less than five minutes. It is so constructed that by dropping a pin from the hinge on the mast, when the mast is sitting up, the mast can be disconnected from the tractor.

The Rumley oilpull industrial tractor is a light, compact tractor, designed and built for general work. It has a braking device on the rear wheels which enables the tractor to be turned in its tracks. The steering device is described as being arranged so that the tractor can be steered with one finger.

Arco Company

PROTECTIVE COATING

The Arco Company, Cleveland, Ohio, is exhibiting three recently introduced products of protective coating as follows: Arco gas bar luminamel, Arco quick drying save-a-line and Arco seam sealer. The former two are used in connection with each other for protecting the under side of metal tank roofs against the ravaging corrosion of hydrogen-sulphide gas. Arco seam-sealer is a heavy bodied black plastic material used for sealing seam or small openings of any kind in composition or sheet iron covered tank roofs.

Kirk-Morrow Iron Works Company

COMBINATION DRILLING DERRICK

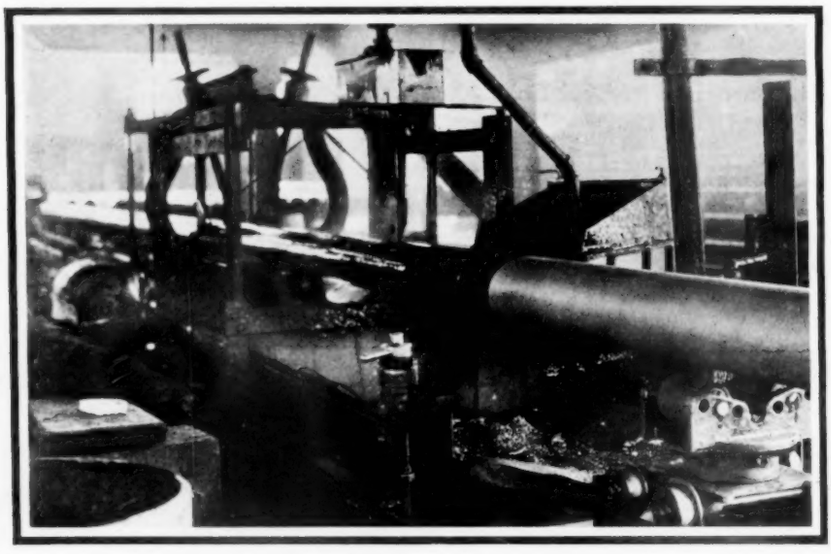
The Kirk-Morrow Iron Works Company, Tulsa, is showing a 122-foot structural steel combination rotary and cable tool drilling derrick constructed to the latest A. P. I. standards, and equipped with steel front, consisting of steel jack posts, sampson post, walking beam and pitman.

A complete assembly of A. P. I. rig irons with quick-change wrist pin, steel band wheel, crown block, calf wheel, triple groove bull wheels and chain driven sand reel will also be included in the company's exhibit.

General Paint Corporation

COATED AND WRAPPED PIPE

General Paint Corporation, Tulsa, is featuring this year its mill coated and wrapped pipe, showing samples of the various specifications and applications. Illustration of the machine for this work is given here in an action picture. The company is also running a moving picture showing a complete description of each step taken from the time the pipe is delivered to the plant from the pipe mill until the pipe is lowered in the ditch and ready for service.



Machine for Coating Pipe

Other products exhibited include a complete line of paints for the oil industry.

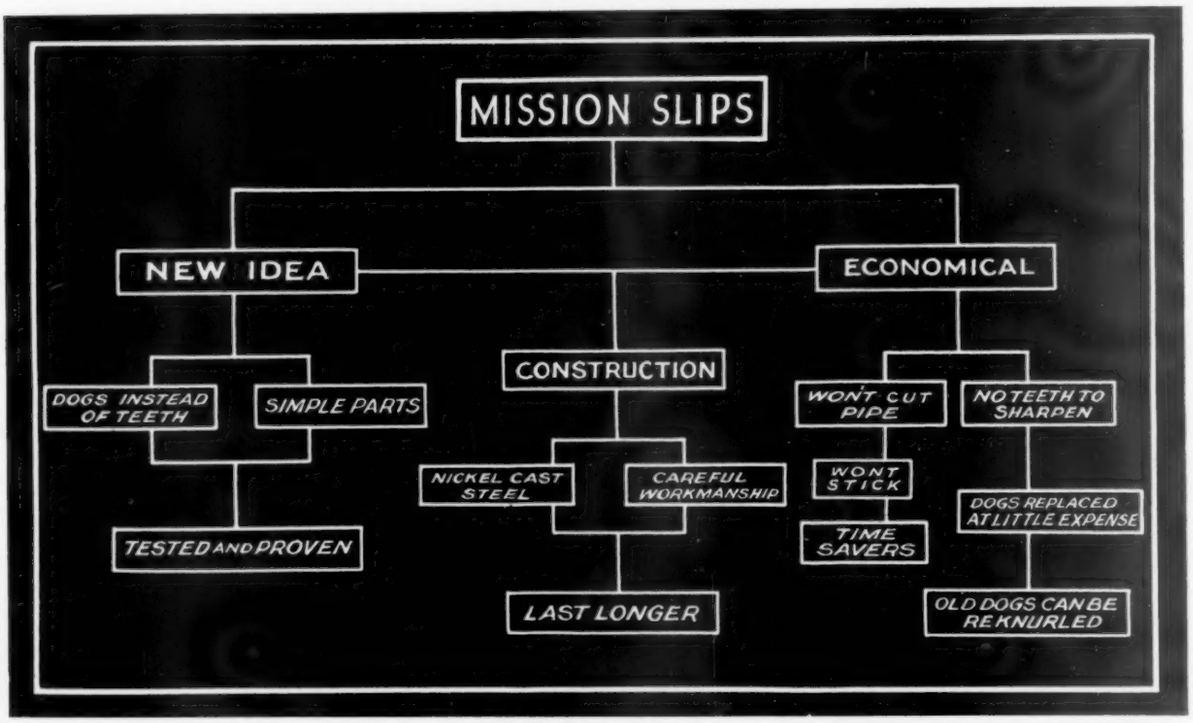
Hill, Hubbell & Company, division, General Paint Corporation, has pipe coating and wrapping plants located on the premises of six pipe mills in the country as follows: A. O. Smith Corporation, Milwaukee; Youngstown Sheet & Tube Company's Indiana Harbor and Youngstown, Ohio, mill; National Crude Company, Lorain, Ohio, mill; Central Tube Company's Economy, Pennsylvania, mill; and Spang, Chalfant & Company's Ambridge, Pennsylvania, mill.

Before you strike pay sand

When the going is tough—tools—the drilling in a fury tough formation—everything Then a bit made from ASCO tempo of the men settles continues as if nothing had your tools will stand the gaff fore the same thing happens ASCO Steel will hold temper sive conditions and the bit other steel bits must be bits mean lower drilling costs portant element—is mini- for your next lot of drilling check the results—there is a

sweating roughnecks pulling to make h e a d w a y thru a goes wrong at the same time. Steel is put in the rig and the down to normal and progress happened. Why not see that of tough rock abrasions be- to you?

under the most severe abra- will continue to operate when pulled and dressed. Working and drilling time — the im- mized. Specify ASCO Steel tools—keep them drilling— difference.



THESE NEW SLIPS CUT YOUR DRILLING COSTS

1. Wearing parts replaced at nominal figure.
2. Will not cut drill stem (guaranteed).
3. Will not hang in spider.

WHY COST IS LESS

The original investment is less as only one set of each size is needed to a rig. There is no delay for resharpening teeth. The dogs are replaceable on the derrick floor in five minutes time, and at a nominal cost. Used dogs may be reknurled at factory if desired thus operating cost is cut to minimum to say nothing of the big saving in drill pipe wear and time.

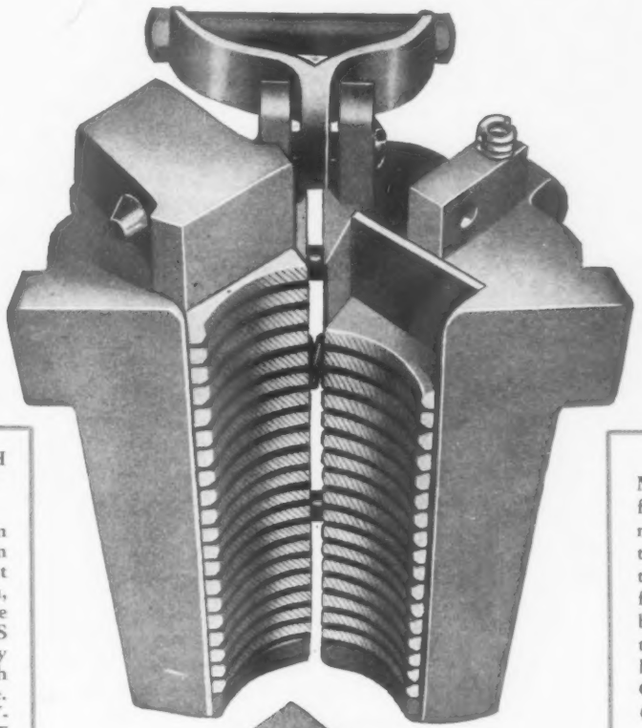
Main body of slip is subjected to practically no wear and is therefore almost a permanent investment. Flat surface of the dogs makes it impossible to cut pipe. Body is of nickel cast steel and the jaws of high carbon heat-treated steel.

These slips have been rigidly tested and proven over a long period.

MIS SALES

ESPERSON BLDG.

THESE NEW SLIPS WILL NOT MAR PIPE— - - - NO TEETH TO SHARPEN

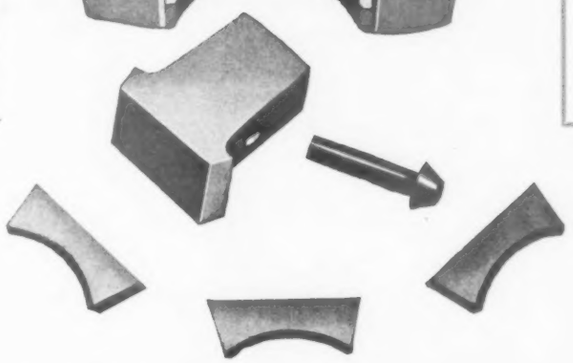


PAYS FOR ITSELF WITH THE PIPE AND LABOR IT SAVES

There is hardly an oil man anywhere who has his eye on his bank balance, and that means all successful oil men, who will not standardize 100% on MISSION SLIPS when he learns how quickly they pay for themselves with the pipe and labor they save. IT IS TO THESE "MONEY-SENSE" OIL MEN THAT THIS ANNOUNCEMENT IS DIRECTED.

INQUIRE FOR INFORMATION *EARLY* as our factory, in spite of the new machinery installed, will be taxed to capacity to supply the additional orders that will follow this announcement. To be certain of getting some of these MISSION SLIPS quickly to prove their superiority, GET THE FACTS *AT ONCE.*

Phone—Wire—Write TODAY.



MISSION COMPANY

HOUSTON, TEXAS

International Derrick & Equipment Company

CHAIN DRIVEN RIG

On this chain-driven rig, belt trouble has been eliminated by using chain for driving the crankshaft and offers a portable, easily moved unit.

The rig, designed for deep drilling and pumping use, is made entirely of steel and is similar to the standard rig. It consists of an IDECO reduction gear drive, crank, chain wheel, "A" frame jack posts, "A" frame sampson and headache post, walking beam, pitman and crank counterbalance. Provision is made for installing a chain-driven sand reel if desired.

The reduction gear unit has five to one herringbone gears and roller bearings, making it quiet in operation and unusually rugged and powerful. The shaft is easily adjusted vertically to different motor heights. The motor rails will fit any motor. Lubrication is by splash feed. This unit is self-contained and entirely enclosed. The steel bed plate mounted on slide rails allows lateral adjustment to maintain proper chain tension. The unit can easily be changed from right to left-hand drive in the field. A flexible coupling between the motor or engine used for power, absorbs the shock of starting and stopping.

The chain wheel is made up of a double tooth sprocket mounted between circular plates and welded to a hub that can be fitted to any standard rig iron shaft. An IDECO deep V double tug rim is provided for use in drilling and cleanout work where bull or calf wheels are used. A bull rope guard placed between the sprocket on tug rim protects the bull rope from chafing. When tubing hoists are used for production purposes, a sprocket wheel is provided in place of a tug rim for driving the hoist. Two standard A. P. I. No. 3 drive chains are used.

One of these complete IDECO steel chain-driven rigs is installed on the IDECO display, and can be seen in operation.

TUBING CATCHER

The IDECO tubing catcher, while positive in action, runs freely in the proper size casing, is not tripped by paraffine or crooked holes and can be run in rapidly. In case of a break in the tubing either above or below the catcher, it will set within a drop of approximately two inches. Furthermore, it will automatically set when the tubing strikes the bottom of the hole while being run in. Operators can tell definitely when the catcher takes hold.

The slips are prevented from over-expanding and damaging the casing when set. The teeth, unusually large, cut in quicker and hold better than fine teeth and are not easily filled with scale and dirt. Slips set with a full bearing against the casing wall.

Sufficient clearance is provided between the tubing catcher and casing to permit free passage of gas and oil. Provision is made so that the tubing can be easily drained and pulled dry.

Although the IDECO tubing catcher is a comparatively new device, many installations have been in use for over 18 months and the many advantages of its use in deep wells have been demonstrated. This tubing catcher may be seen as part of the IDECO exhibit.

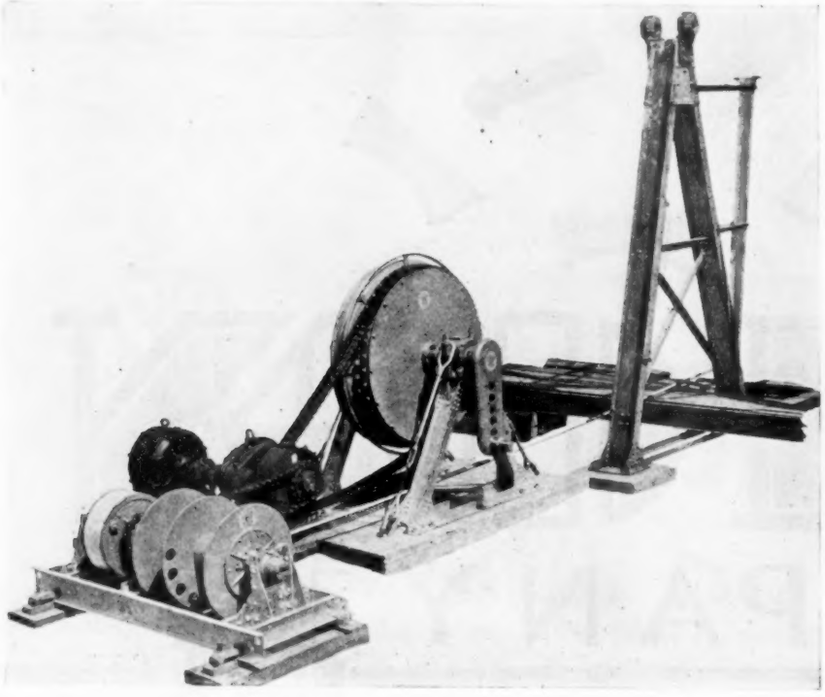
Blackor Company

SUPER-ABRASION RESISTANT

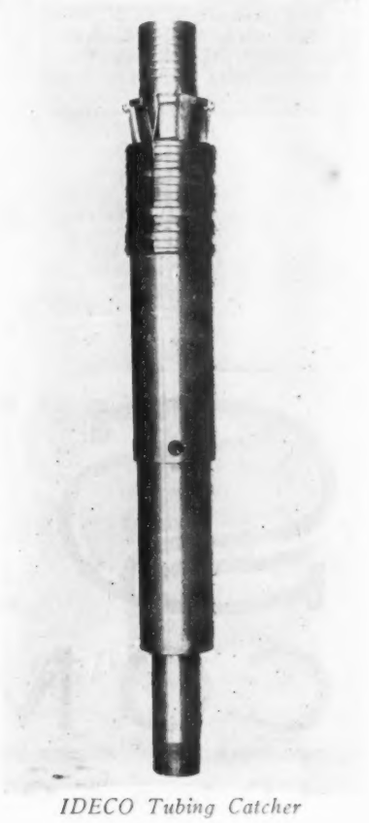
Demonstrations of Blackor, the super-abrasion resistant, are being given during the exposition.

The company has set up a complete electric arc welding shop within the booth and all types of drilling tools and other equipment are being welded and the toughness and abrasion resistance of Blackor demonstrated. Educational demonstrations of the proper uses and applications of Blackor are being given for the benefit of field welders

The Blackor Company is distributing a special catalog and instructions book. Several drilling tools that have made record digging in some of the world's deepest wells are exhibited, showing the degree of wear that takes place under various operating conditions.



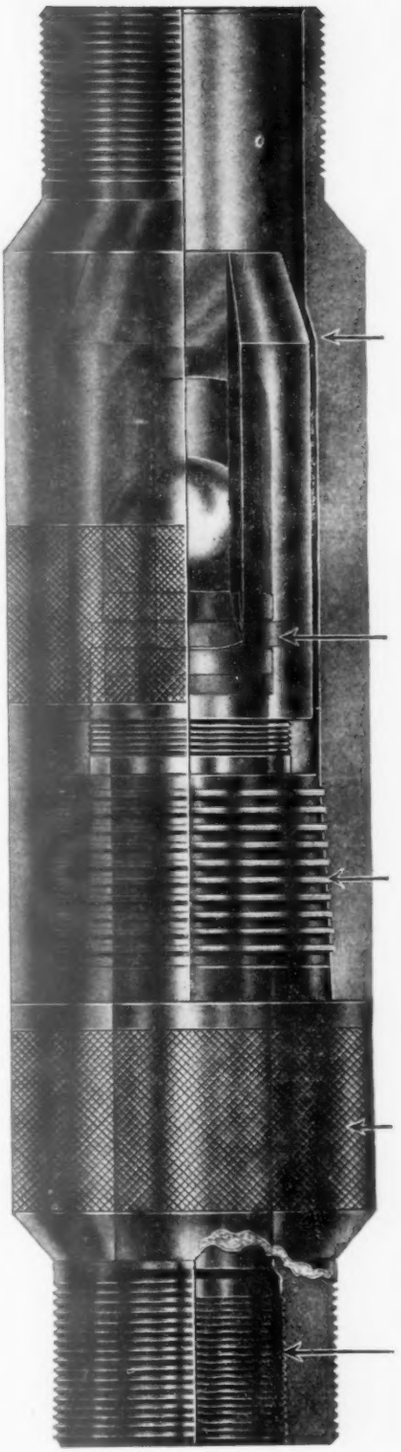
IDECO Chain-Driven Rig



IDECO Tubing Catcher

800 valves

. . . . and not one failure!



In seven months, over 800 PETRO Oversize Standing Valves have been put into service in the Mid-Continent field . . . without a single reported failure!

Petro Oversize Valves are manufactured by practical pumping equipment specialists — who are daily in contact with actual conditions encountered in the field and with men who are responsible for production.

Petro Oversize Standing Valves will increase production — permit slower pumping which results in longer life of all the equipment.

Compare a Petro Oversize Standing Valve — it reflects the high quality of steel, the care and precision of manufacture . . . then test it under the most severe conditions . . . the result is more convincing than 800 testimonials.

Nu-Alloy
Non-Corrosive Steel
Balls and Seats

Nu Alloy Balls and Seats have established new service records throughout the Mid-Continent Fields for continuous and uniform performance.

Nu Alloy Balls and Seats maintain this reputation because they are manufactured in our own shop with precision machinery and the most modern electric furnaces which enable us to control every operation.

The entire staff of the Petroleum Equipment Company are pumping equipment specialists and their services are available to every producer.

IMMEDIATE SHIPMENT

Your supply store can secure immediate shipment of NU-ALLOY Balls and Seats within two hours after you order is received. Branches: Houston, El Dorado, Tulsa, Coffeyville. Headquarters and plant: Fort Worth, Texas.

Petroleum Equipment Co.
FORT WORTH TEXAS

JON R. LONG, Manager

Plant and Office: FORT WORTH, TEXAS

1 YEAR OLD

58

Cameron Iron Works

STEAM-OPERATED BLOWOUT PREVENTERS

Were Sold During the past

12

Months

THANKS . . . .

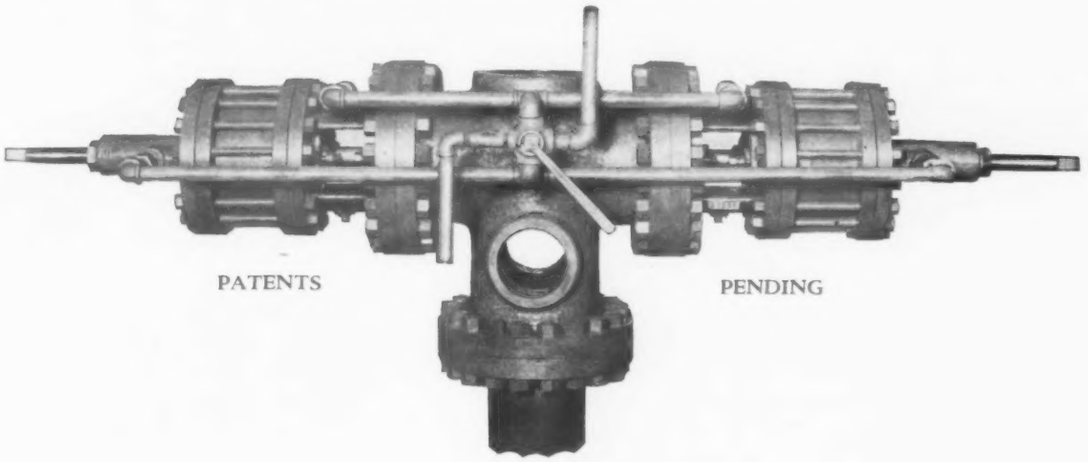
and a Pledge

Were it not for the oil industry's reliance upon and faith in the ability of the Cameron Iron Works Blow-out Preventers to function whenever called upon, this remarkable sales record would not have been possible.

Consequently it is with great appreciation that we thank you for your patronage, and pledge ourselves to maintain the high standard of quality that has won for these preventers a place of esteem in the oil industry.

--- and the most popular blowout preventer *in the* Oil Fields!

On the C-I-W reputation and on its own merits the Steam Operated Blowout Preventer has won the recognition and favor of everyone engaged in the production of oil.



No finer tribute could be paid this mighty master of high pressures.

Since its introduction to the oil industry one year ago, 58 have been purchased, installed and successfully prevented all danger of blowouts. Not one has failed to perform when called upon to prevent a blowout.

It would be difficult to state definitely what loss they have prevented, but it is safe to say that had one blowout occurred, it would be considerably more expensive than the total cost of all the preventers sold. The loss prevented on any one well by these preventers is so great that the cost of the preventer is entirely negligible.

The main body of the preventer is made of toughest steel cast in one piece. This body is flanged and bolted to the last string of casing making installation of the preventer an easy matter. Steam cylinder units are also bolted to the main body, making the changing of rams for different size pipes a simple and easy job. All bolted connections are attached to the body with grooved leak-proof flanges.

The steel rams, when closed form a complete circle around the steel drill stem. The tops and bottoms of the rams are machined to form a flat surface against which couplings or tool joints butt, and through which they cannot pass. This vise like grip is instantly applied by steam from your boilers.

The four-way operating valve which controls the opening and closing of the rams is located at a safe distance from the well. A quarter turn of this valve closes the rams and a like turn in the opposite direction opens them. You have the advantage of "remote control" and mechanical operation.

All preventers are tested and guaranteed to withstand 2500 pounds pressure per square inch.

CAMERON IRON WORKS INC.
HOUSTON TEXAS

California Distributor: PETROLEUM EQUIPMENT CO., 2800 S. Alameda St., Los Angeles, Calif.

Climax Engineering Company

DRILLING ENGINE

Climax Engineering Company, Clinton, Iowa, is exhibiting its new six-cylinder, 150 horsepower, natural gas and gasoline drilling engine which has just been brought out for deep cable tool and medium heavy rotary work. It is the "Drillmaster," and is the fourth Climax drilling engine, completing a power range of 65, 85, 130 and 150 horsepower.

This new "Drillmaster" engine has more power than the Climax Paymaster, and embraces many improved features in design and equipment.

Its valve-in-head design permits of large water passages for better cooling of blocks, heads, and especially around the valves, which is particularly essential for operation on natural gas.

Rocker arms are fully enclosed and are lubricated by pressure from the main system.

Advanced internal combustion engineering is in the design of this engine, which is one of the new Climax blue streak series.

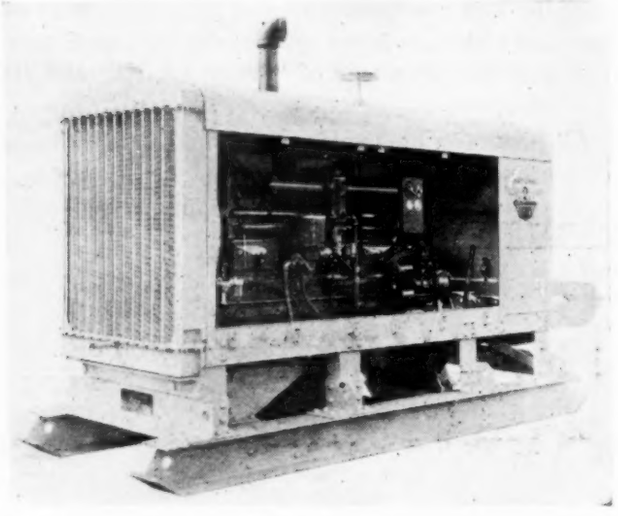
The new Climax gas mixing valve is standard equipment of the new engine. It automatically controls both gas and air through the medium of sylphon connected to the manifold which regulates the combustion mixture according to the requirements of the engine for any given load and speed, and according to its constantly fluctuating requirements, subject, of course, to throttle control, either manually or by the governor.

A diaphragm fuel pump is included as standard equipment for use when gasoline is burned.

The engine is mounted on a heavy, fabricated steel frame. Extending to the rear, the frame supports two outboard, self-aligning ball bearings which carry the drive pulley shaft. The shaft is connected by a flexible coupling to the power take off shaft; the construction here being such as to relieve the power take-off and engine from shocks and strains transmitted from the tools. Enough room is also allowed so that a V-belt sheave may be substituted for the flat belt pulley. Heavy H-section skids form the bottom part of the frame.

Hood and side panels entirely enclose the engine, which may then be locked. The side panels lift out; the hood comes off in one piece by merely removing bolts.

Other equipment consists of electric starter and generator with 150 ampere hours 21 plate battery, telegraphing throttle control, air cleaner, 18-inch disc clutch, turnbuckle and kit of tools.



Climax Engine

With the engine is also exhibited the Climax reverse clutch. The forward clutch is a large two-plate, disc clutch with reserve capacity well beyond that of the engine. The shaft is alloy steel, heat treated. The reverse mechanism is of bevel gear and pinion type. This clutch has a special Climax patented control with just one level which operates "go ahead" clutch, neutral brake and reverse. Shifting is done through cams. Flywheel, 56-inch diameter pulley, and turnbuckles are included as standard equipment.

Chaplin-Fulton Manufacturing Co.

REGULATOR

The Chaplin-Fulton Manufacturing Company is exhibiting the cutout latch regulator, illustrated here.

Cutout Latch Regulator

The purpose of this regulator is to stop the flow of gas through the body when the pressure on the diaphragm falls to a given point. It is provided with a cut-out latch, which automatically holds the valve to its seat when the pressure on the diaphragm fails. It is used principally in connection with low pressure burners and furnaces.

In case of failure of the gas supply or the gas pressure dropping below a predetermined point, the function of this regulator is to shut off, immediately, the supply of gas to the burners, and at the same time lock the valve in such a manner that the gas cannot be turned on at the burners without the operator going to the valve and opening it by hand.

Dodge Electric Company

ELECTRICAL SUPPLIES

Dodge Electric Company's exhibit is featuring the process of rewinding oil well motors. On display will be the U. S. ball bearing motor which has an asbestos protected winding. The paper pulleys, motor bearings for all standard makes of electric motors and vapor proof lighting fittings are also being displayed.

The motor department of this company, which this display is representing, is equipped to rewind and repair any type and make of motor, and makes all different types of motor coils.

The development of this department in the Dodge Electric Company has resulted from the company's location in the heart of the oil country, where demand for rewinding of motors and general electric motor repair work has been created.

Yes, there are less expensive hotels than the Ritz, but the sophisticated traveler appreciates more than anything else, the security and peace of mind of facilities he can depend upon.

There are also cheaper methods of cementing than the Halliburton method—but even the cheapest lock is expensive when used to protect a treasure chest!

HALLIBURTON

OIL WELL CEMENTING COMPANY

DUNCAN, OKLAHOMA

85 - 170 B.H.P. ENGINE COMPRESSOR

BUILT AS SINGLE OR TWIN UNIT

TYPE 80

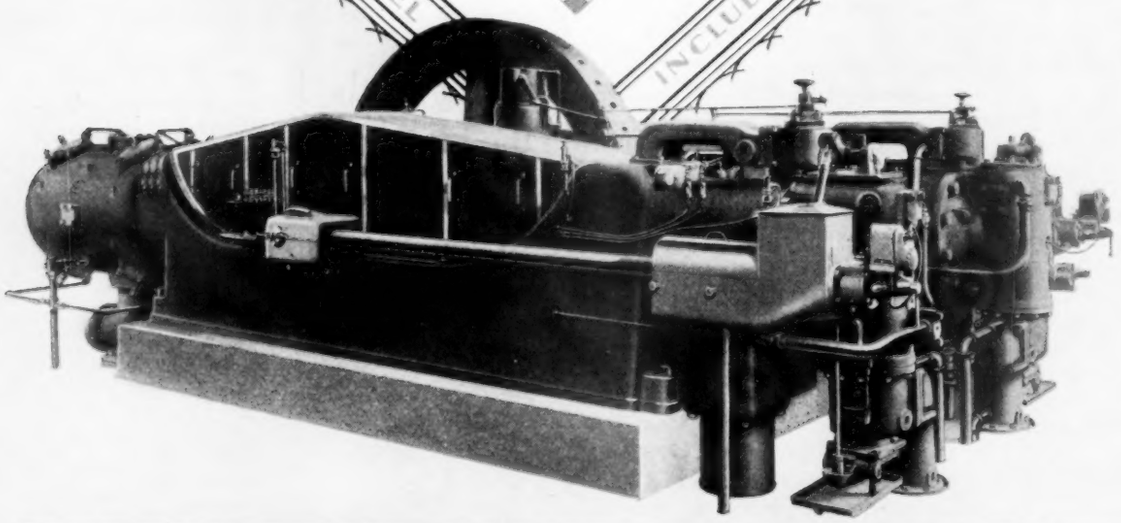
ALTHOUGH existing types of Cooper engine compressors are performing in a manner thoroughly satisfactory to owners and operators, Cooper-Bessemer engineers are constantly seeking ways to make these units still better. Out of scientific research, laboratory tests, advanced engineering, modern equipment and materials, has been developed a new and improved Type-80—an engine compressor that offers even greater value than the models preceding it.

Some of the refinements found in the new Cooper Type-80 are: a new and better breather compartment; special heat-resisting exhaust valves; longer power cylinder liners; larger inlet valves; improved exhaust chambers; better water cooling throughout, and more efficient compressor cylinder valves.

The New Type-80 is looked upon as simply a larger Cooper built smaller - with every detail cared for to insure lasting, economical and dependable operation. It is the 4-cycle, horizontal, direct-drive type, built as a single cylinder—85 B.H.P., and as a twin cylinder—170 B.H.P. Its chief applications are air and gas lift, gas boosting, gasoline extraction from gas, gas compressing, handling still vapors and weathering gases in refineries, air compressing, and repressuring oil sands. *Write for Bulletin entitled* - "THE NEW AND IMPROVED TYPE-80 COOPER GAS ENGINE COMPRESSOR."

MANY IMPROVEMENTS IN NEW MODEL

INCLUDES LARGE ENGINE FEATURES



THE COOPER-BESSEMER CORPORATION

50-60 B.H.P. ENGINE-COMPRESSOR

CONVERTIBLE GAS OR OIL ENGINE

TYPE 16

THE first Cooper Type-16 engine compressor units built have been in use over two years. With the exception of a few changes and refinements which were found necessary, these units have been practically free from trouble.

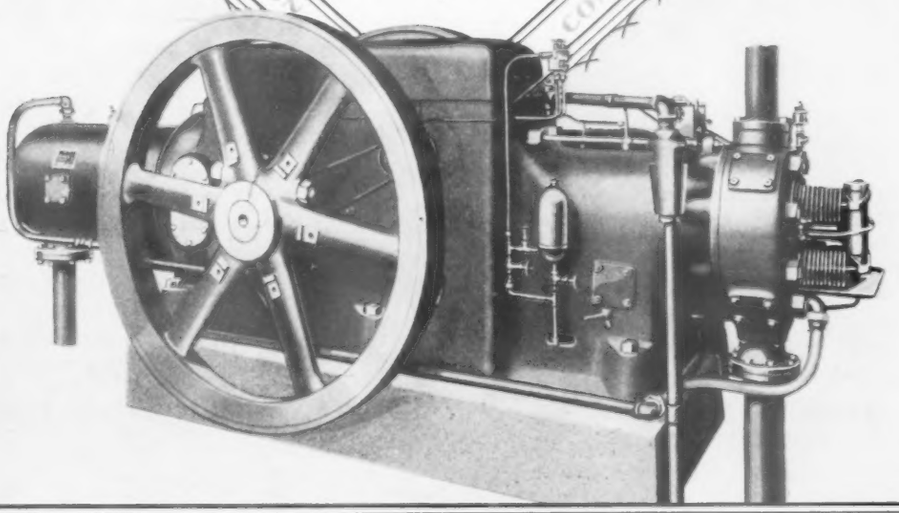
Type-16 is small, compact, self-contained—the engine and compressor being built into one direct-drive unit. It is rated at 50-60 B.H.P., depending upon the speed. The unit is shipped completely assembled, and is readily convertible for either gas or diesel operation. Using single or two-stage compressor cylinders, its range is from 26 inches of mercury vacuum suction to 2000 pounds discharge pressure.

Type-16 has the fuel economy inherent in 4-cycle engines; its semi-automatic operation effects a material saving on labor; rugged parts and solid construction reduce maintenance costs; and the consumption of lubricating oil is low.

Within its power rating, its applications are the same as for Type-80, plus belt-driving power equipment. *Write for Bulletin entitled*—"COOPER TYPE-16 COMPRESSOR UNIT."

PRACTICALLY TROUBLE-FREE OPERATION

COMPACT BECAUSE DIRECT-CONNECTED



MT. VERNON, OHIO & GROVE CITY, PENNA.

Hercules Tool Company

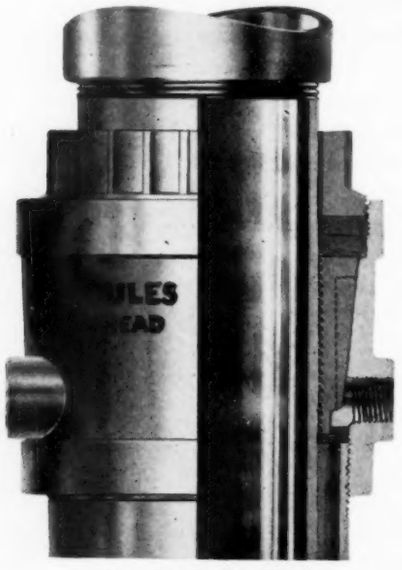
Hercules Tool Company, Tulsa, is featuring the following products:

CASING HEAD

This is a casing head with slips for two strings of casing. It supports the inside string of pipe on slips using the Hercules method of packing off around the casing.

With its new principles and positive grip slips, it affords casing protection and permits the operator to raise or lower the casing at will by removing the packing nut, packing and slips. The casing head can be repacked without picking up casing.

The inside diameter of the casing head is the same size as the larger string of casing on which the casing head is set up. Either three or four slips, depending on size, are used within the casing head to support the inside string of casing. On top of the slips and within the casing head, ample space has been provided for the rubber packing. This packing is compressed down into the casing head, and chain tongs are the only tools necessary to connect the entire "set-up." The casing head is provided with two side outlets threaded for three-inch pipe.



Hercules Casing Htad

The body and slips are made of electric cast steel and offer a safety factor of 2500 pounds with sufficient strength to carry a hanging weight of approximately 300,000 pounds.

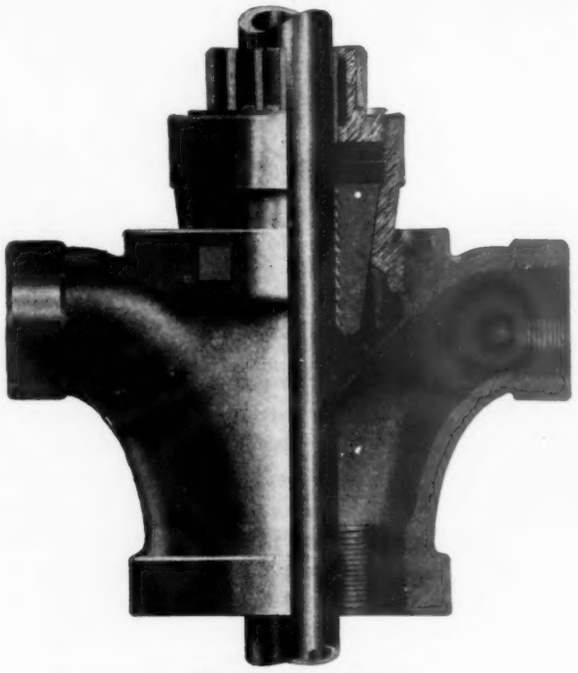
The inside diameter of the casing head being the same size as the larger string of casing on which the head is screwed, allows the coupling on the inside to pass through when running or pulling without interference.

To raise or lower the inside of casing unscrew packing nut, remove the rubber packing and slips, then either raise or lower the casing to point desired, replace the slips and packing ring and screw packing nut back into place.

FLOW HEAD

The Hercules flow head was especially designed for air and gas lift. It is simple and compact, and although constructed for flowing wells, it is being successfully used as a casing head after the well is put on the pump, the makers point out. The body, (casing head T or Y type) is made of electric steel casting.

The flow head body has a regular casing head top with set screws so that in case it is desired to run tools into the well an oil saver may be used. In order to do this, the top section (flow head packing bowl) must be unscrewed and removed from the flow head body. If a control head is used while



Hercules Flow Head

cleaning out, swabbing or agitating, a short nipple is screwed into the top of the flow head and the control head screwed on to the nipple. The top section is equipped with three slips which support the tubing by gripping completely around it. On top of the slips rests two packing rings which are compressed by a packing nut that screws down into the flow head packing bowl and packs off around the tubing.

The type A, or Y-shaped flow head, has a two-inch outlet on the back side so that a pressure gauge may be attached. The type B, or T-shaped flow head, has two three-inch, 90-degree side curved outlets.

Naylor Pipe Company

SPIRALWELD LINE PIPE

Naylor Pipe Company this year is featuring Naylor Spiralweld line pipe, which involves new engineering features in pipe manufacture. The spiral lock-seam truss welded to the wall of the pipe offers a mechanically correct structure, which gives improved structural strength with minimum weight, an item in saving freight and handling costs.

The manufacturers state that this development makes the pipe 50 per cent lighter in weight. The pipe is made of Toncan iron as a resistant to rust and corrosion.

Kellogg Switchboard & Supply Company

TELEPHONE EQUIPMENT

Kellogg Switchboard & Supply Company, of Chicago, is exhibiting a complete line of oil field telephone equipment, including several switchboards.

The insulated wall telephone, the phantom repeating coils and the insulating transformer are proving interesting to companies whose communication lines are in the near vicinity of high tension lines.

In addition to the telephone equipment there is a small display of outside line construction materials.

A new type of desk stand and receiver cord is being shown.

The REEL *Favorite of the* OIL SHOW

BOOTH 24
TEXAS BUILDING

E. H. EDWARDS COMPANY
Standard Oil Building
San Francisco

Mid-Continent Distributors
Hinderliter Tool Company
Tulsa, Oklahoma

EDWARDS WIRE ROPE

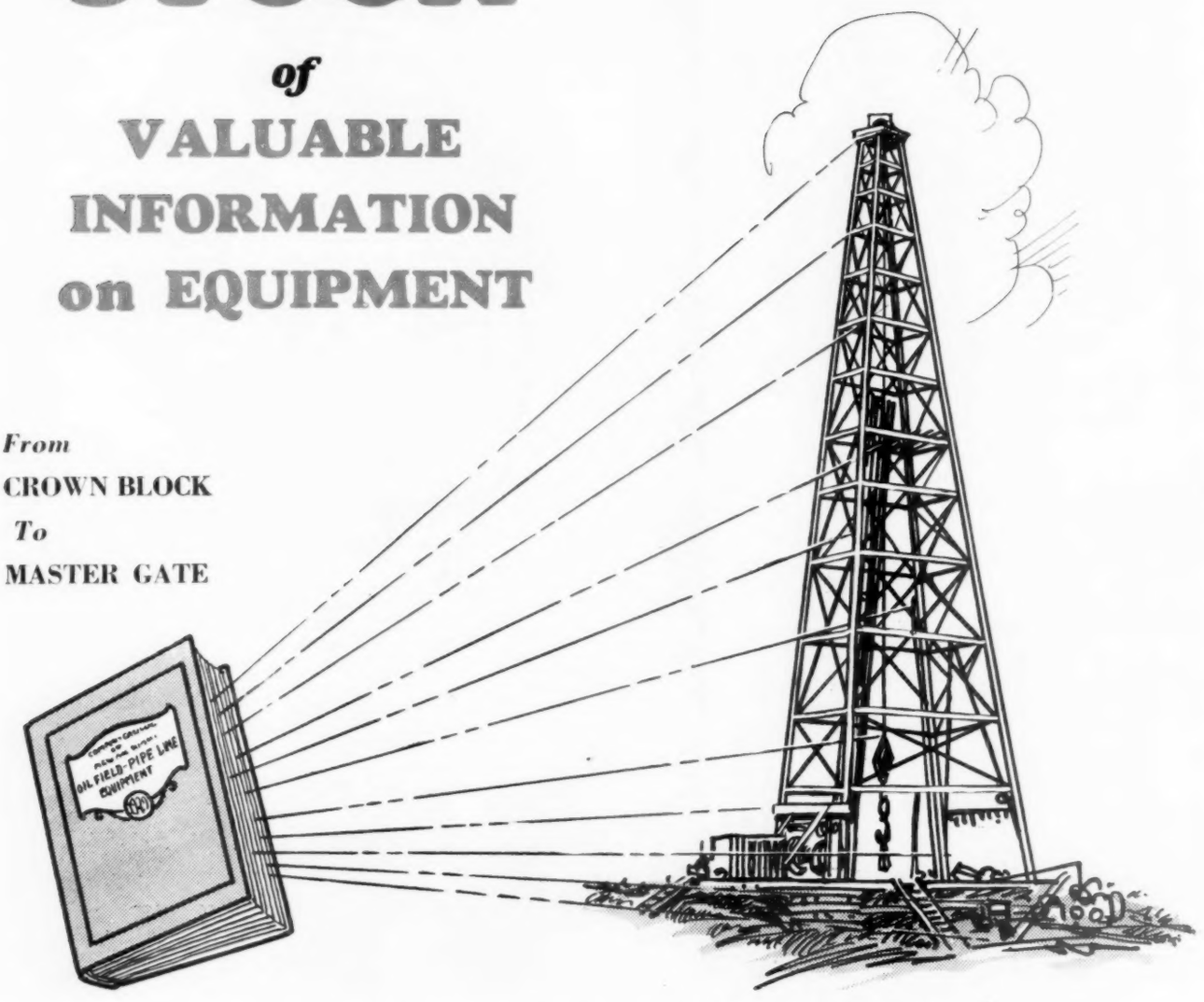
A Veritable Emergency

STOCK

of

VALUABLE INFORMATION on EQUIPMENT

From
CROWN BLOCK
To
MASTER GATE



FROM SLUSH PUMP TO CASING WAGON
CHRISTMAS TREE HOOK-UPS — STORAGE
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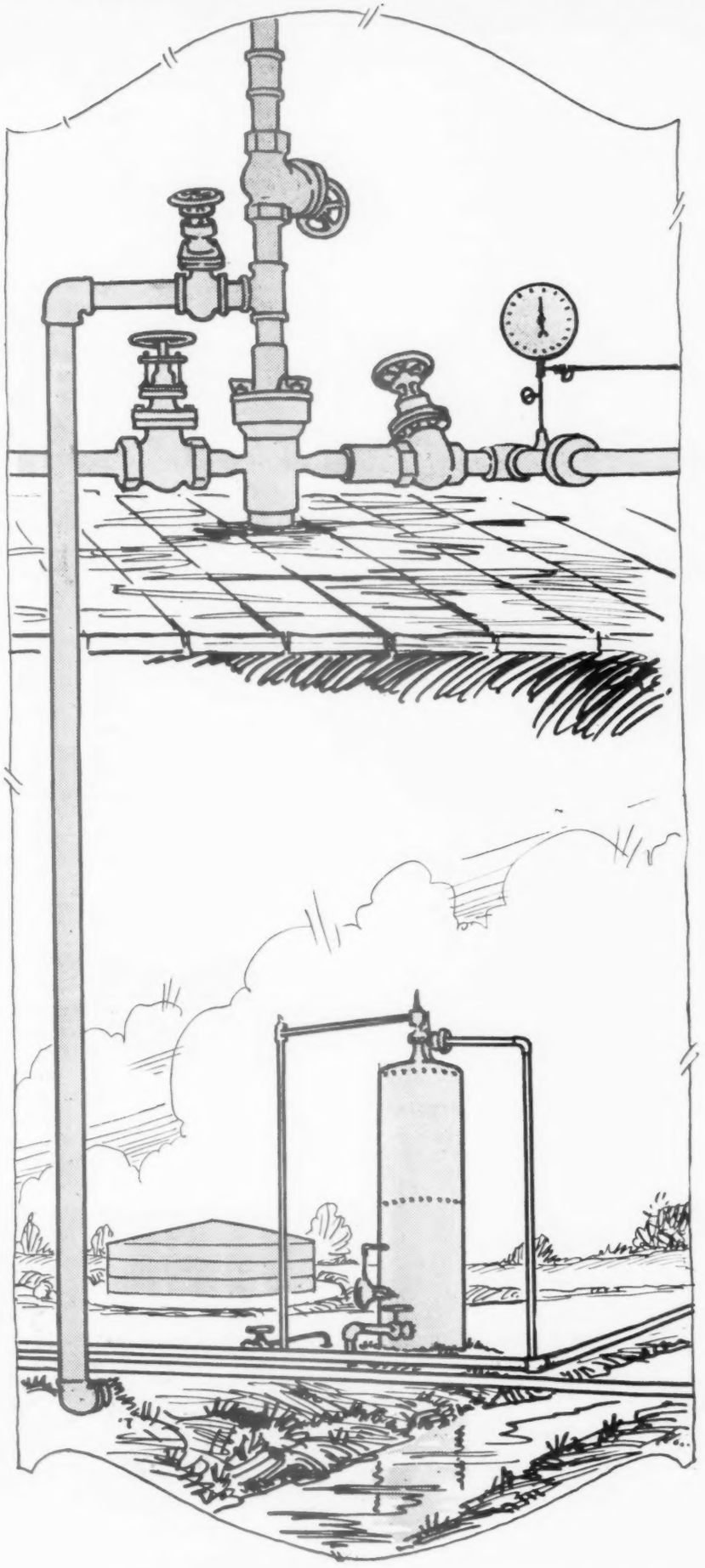


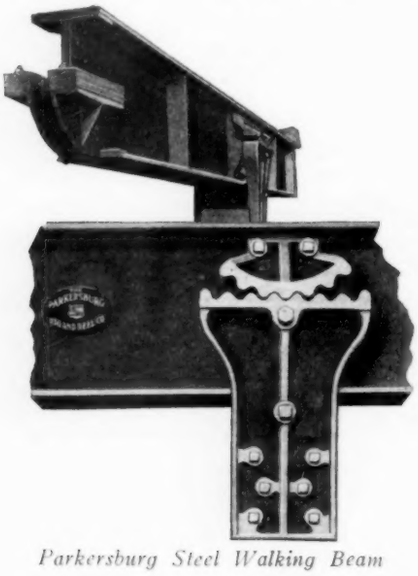
Parkersburg Rig & Reel Company

Parkersburg Rig & Reel Company, Parkersburg, West Virginia, is this year featuring the HB pitman, the new steel band wheel, the double-deck roller-bearing crown block, the new Parkersburg oil and gas separator, or mist extractor, and the steel walking beam.

STEEL WALKING BEAMS

The Parkersburg ICR type steel walking beam introduces a new principle of suspension for this member of rig equipment.

Unlike the usual walking beam saddle, with trunnions operating in side iron bearings, the ICR type in motion rocks on a



Parkersburg Steel Walking Beam

pair of cogs on either side. The position of the fulcrum center is on the same horizontal line with the temper screw or pumping hanger bearing. This equalizes the load, thereby preventing weaving or side sway of the walking beam.

The saddle bearings furnished will fit any sampson post drilled for A. P. I. side irons.

The walking beam proper is constructed of heavy 24-inch steel I-beam amply reinforced, and is furnished in 24 or 26-foot lengths as desired.

This is one of several types of steel walking beams made by the Parkersburg Rig & Reel Company for both drilling and pumping service.

HB PITMAN

The new pitman is of H-beam construction, and is known as Parkersburg type HB. The features claimed for the new product are a self-oiling, self-aligning bearing, and quick and easy removal from the wrist pin.

The lower half of the bearing pivots on the fulcrum pin. The upper half is held on the wrist pin through a tension lever and may be quickly released by the lever on the side.

The self-aligned feature eliminates strain and stress due to weaving of the walking beam in motion.

The type HB pitman is available for use with all standard wrist pins, and is adjustable for various lengths.

OIL AND GAS SEPARATOR

The Parkersburg-superior oil and gas separator or mist extractor is on display this year.

In series with the production line, this new item provides the means of extracting dry gas for use or market. It takes the gas from the line and allows the oil to pass on its course to the tank. It also functions as a settling tank to separate water from the oil and remove sediment.

Parkerburg Separator

An explanation will be made of the possibilities of this separator for handling "drowned" gas wells. Water can be pumped through the device and the gas removed. The recovery is materially increased and the natural flow of the well is greater when the pressure is thus relieved.

The separator is simple and its operation entirely automatic. Because it relieves back pressure on the well, it is said to have increased production to some extent in numerous test installations. The line from the well, either flowing or pumping, is attached to the tangent-directed connection near the top of the separator. The fluid takes a whirling motion and passes down over a series of baffles, breaking up the contents to release the gas. The gas passes through perforations provided, and is carried out through the line at the top.

Sediment and water is drained off from the bottom. The manhole at the side provides entrance for occasional inspection and cleaning.

The interior construction of the separator is of copper bearing steel. The valve is of brass, these materials being selected to resist the corrosion hazards to which this type of equipment is subjected.

This separator is made in a number of different sizes and

Parkersburg Type HB Pitman

Fishing Tools Drilling Tools

AMERICAN IRON & MACHINE WORKS, INC. · OKLAHOMA CITY ·

TWO PROFITABLE AMERICAN TOOLS . . . .

The American Rock Bit Breakout Block

Fits in your rotary table. The American Rock Bit breakout Block is the first and only tool of its kind ever offered the drilling industry. Holds the bit firmly in place while breaking joints, and means speed and safety for the men on the rig. It's a protection against losing or damaging rock bits while breaking joints. Small drain holes in bottom let slush drain back in the hole. Made for any size bits.

The American Rock Bit Breakout Block.

The American Lead Plug

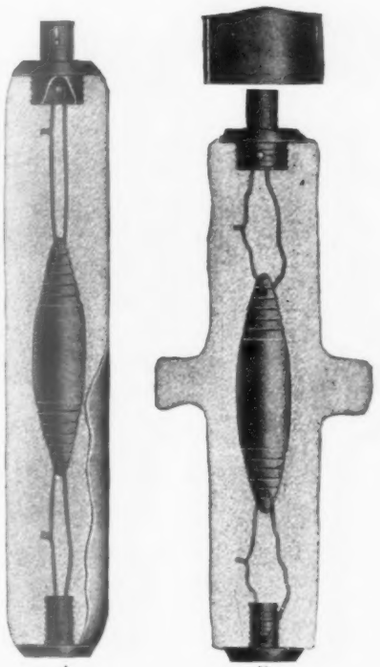
The merits of the American Lead Plug are as follows:

The tapered mandrel gives double expansion.

The mandrel is made of cast iron and is therefore very easily drilled out. The plug is made with rope socket neck to allow fishing same out in case it should be lost in pipe. This plug can be made in any size.

These two American Tools are PROFITABLE ones—for they save you time in your drilling operations. See them at your nearest supply store—or write us for detailed literature. Other drilling and fishing tools made by American are listed below.

Bushing for smaller size rock bits that lets your Breakout Block fit any size bit. Bushings are obtainable in various sizes.



A B

A. This illustration of the American Lead Plug shows how the plug looks when running into the hole.

B. This illustration shows how the Lead Plug works and seals when driven into position.

AMERICAN IRON AND MACHINE WORKS CO.

Manufacturers of Oil Field Equipment

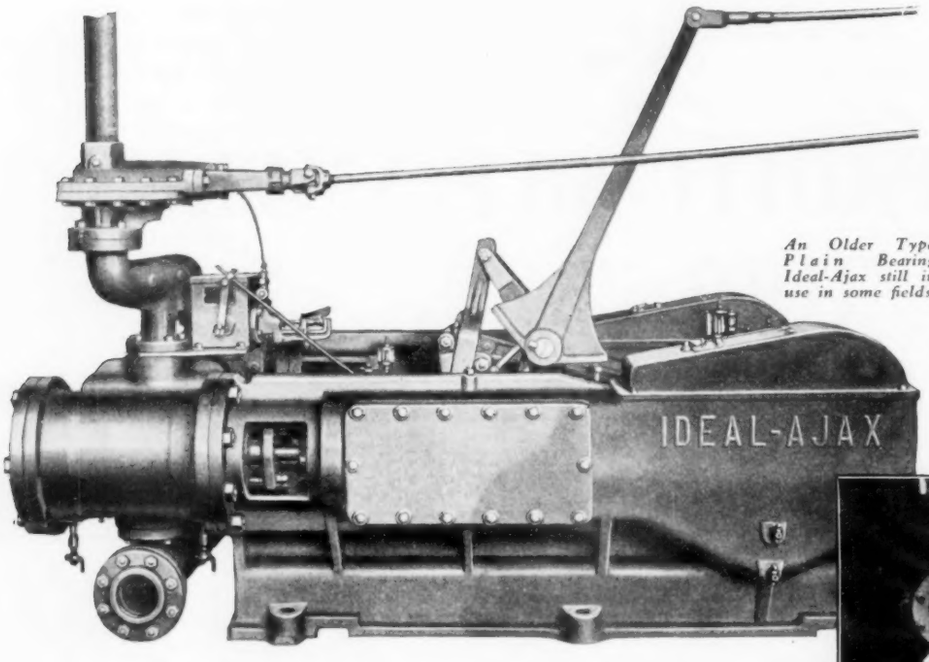
Oklahoma City, U. S. A.

AMERICAN OIL FIELD EQUIPMENT

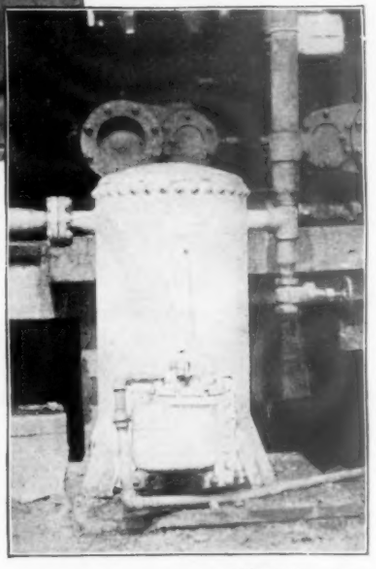
American Releasing and Circulating Overshots.
American Rock Bit Wrenches
American Milling Shoes
American Flexible Coupling for Rock Bit Lubricators
American Steel Tool Houses
American Steel Tool Boxes
American Forged Steel Wall Hooks
American Rock Bit Breakout Blocks
American Paraffin Bits
American Female Die Nipples
American Forged Steel Drill Collars
American Tapered Taps
American Forged Steel Subs
American Rotary Shoes
American Cone Fishing Baskets
American Steam Lubricators
American Side Tracking Mills
American Combination Reverse and Throttle Levers
American Steel Engine Foundations
American Automatic Cathead Control Levers
American Rotary Milling Tools
American Myracle Sucker Rod Sockets
American Surface Bit Blades for Rock Bits
American Drill Pipe Float Joints
American Pump Manifold Check Valves
American Eccentric Releasing Overshot
American Casing Suspension and Blowout Preventer
American Lead Plug
American Rock Bit Cone Fishing Sockets
American Steel Whipstocks
American Inside Pipe Cutter for Drill Pipe or Casing

A NEW IDEAL-AJAX

Gives New Speed . .



An Older Type Plain Bearing Ideal-Ajax still in use in some fields.

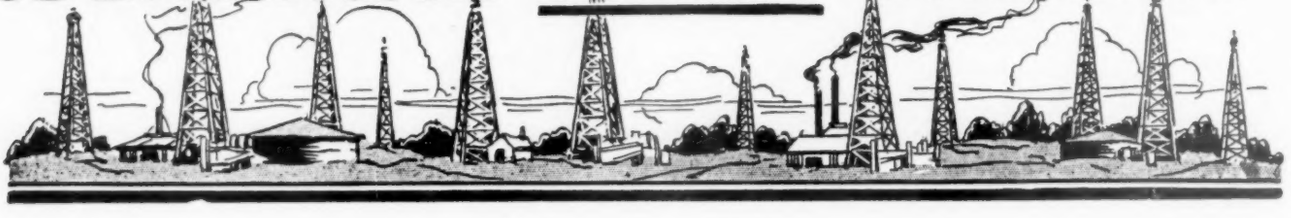


Ideal-Ajax Steam Separator — extra capacity, can be hooked up to old equipment.

YOUR present Ajax Equipment, where you want to "pep up" drilling can be equipped with the new IDEAL-AJAX Steam Separator. It can be hooked up with your present equipment and old-type separator, or you can take off the old separator, hook up the new one, and so eliminate weight on the steam manifold.

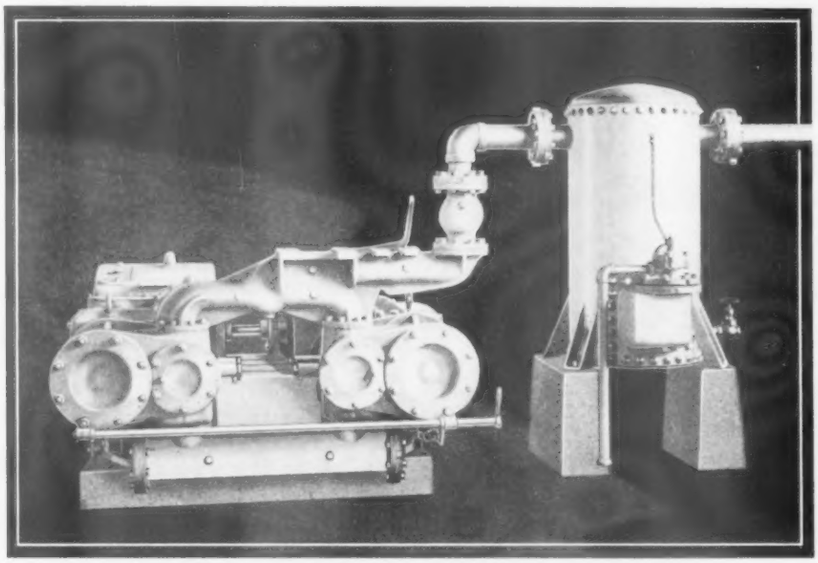
This is another evidence of the way in which AJAX is kept well in advance of present-day practice. Several models of Single and Twin Engines, plain and roller bearings, to meet all field requirements.

IDEAL-AJAX STEAM DRILLING



STEAM SEPARATOR

Especially on Long Steam Lines



IDEAL - AJAX 12 x 12 Twin with extra capacity Separator. The latest Ajax Outfit.

ILLUSTRATION above shows new Steam Separator furnished at the factory with the IDEAL-AJAX Twin Roller Bearing Engine. This is the latest Ajax Equipment.

The IDEAL-AJAX Roller Bearing Engine is making new records for speed, power and durable efficiency. During the past few years there have been as many refinements in Ajax Steam Engines as have been realized in the present-day automotive gas engine.

If you have not seen the NEW AJAX, talk with the National Supply Company man about its performance in different fields.

Made by AJAX IRON WORKS, Corry, Pa.

DISTRIBUTED BY

THE NATIONAL SUPPLY COMPANIES

NSCO

In every oil field

ENGINES DELIVER POWER-PLUS

capacities, with working pressures up to 1000 pounds maximum.

The illustration is of the D-1 model, which has a daily fluid capacity of approximately 5000 pounds, and is constructed to withstand pressures of 200 to 300 pounds.

Parkersburg Steel Band Wheel

NEW STEEL BAND WHEEL

A new Parkersburg type M steel band wheel has a built-in wood face, fitting it for use with either friction or chain driven band reels.

The spokes of the wheel are made of heavy steel channels which fit over cast bosses on the flange hub.

This type of band wheel is offered with 12-inch, 14-inch or 16-inch face, in diameters of 10, 11, 12 and 14 feet. All are adapted for use with either double or triple-tug tug pulleys.

A 14-foot type M band wheel with a triple-tug rim is on display.

DOUBLE DECK ROLLER-BEARING CROWN BLOCK

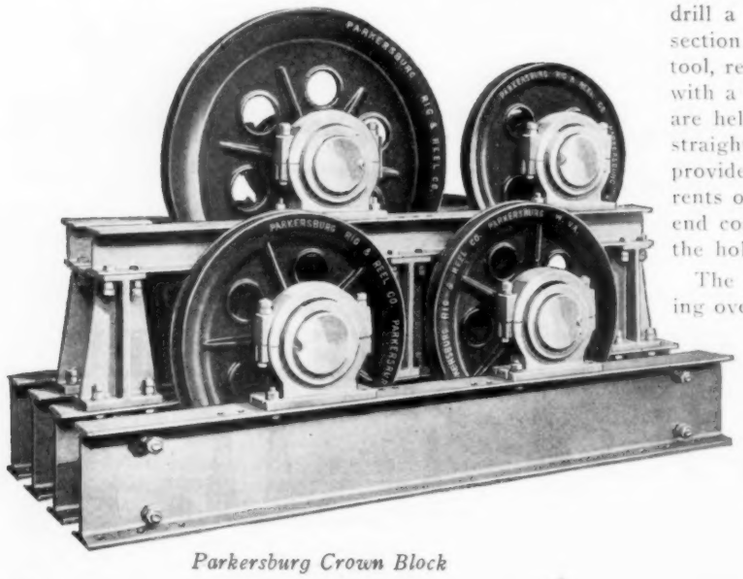
The Parkersburg Rig & Reel Company has introduced an extra heavy drilling crown block, as shown here.

Roller bearings, with self-aligning boxes, manganese steel sheaves, A. P. I. rope grooves, alemite lubrication, and adjustable arrangement for rotary or combustion derricks are features.

The double deck design permits use of large diameter sheaves and central perpendicular suspension of the lines to the traveling block.

The base frames of the new block are made of 12-inch, 40-pound I-beams, with special pareelite supports and spacer castings. It may be easily dissembled for hoisting, and is simple to assemble on the water table.

A six-sheave block of this type is on display.



Parkersburg Crown Block

Petroleum Chemical Company

OIL TREATING COMPOUND

Petroleum Chemical Company, Tulsa, is featuring a new oil treating compound known as Kemy, which is manufactured in Tulsa. It is used for treating cut oil at low temperature, thereby saving in volume in gravity loss and which will treat out practically all of the basic sediment, thereby saving b. s. loss.

Kemy is put up in five-gallon cans and 50-gallon drums. During the several years of research in the field and laboratories and since the product has been marketed, every form of oil emulsion in the Mid-Continent fields has been treated.

Hinderliter Tool Company

DRILLING AND FISHING TOOLS

Hinderliter Tool Company has on display its line of rotary and standard cable drilling and fishing tools.

The standard cable tools are: eccentric socket, eccentric grab, bailer tube socket, improved split casing and tubing rings, cement dump bailer, improved wire line rope knife, plunger sand pump, spiral bits, casing ripper, casing perforator and casing splitters.

The rotary tools are: tool joints, fish tail bits, regular and fluted drill collars, eccentric circulating and releasing overshot, combination male and female circulating tap and mills.

Hinderliter rotary tool joints are forged from a high grade alloy steel, and lathe turned, every operation controlled. They are oil heat treated, designed for strength and safety and against abrasion and galling. Every thread is the same.

Hinderliter regular rotary drill collars are forged from a solid billet, bored and machined cold. They are designed with an elevator or overshot recess at the top. The box collar diameter forms the remaining portion of the tool.

The Hinderliter rotary fluted drill collar is designed to drill a round straight hole. The diameter of the winged section is smaller than the diameter of the bit or cutting tool, reams the walls to maximum diameter and when used with a regular drill collar between it and the bit, the tools are held in a vertical position and the drilling of a round straight hole can be accomplished. The winged section is provided with flutes or water courses of proper size, warrents on uncongested hole fluid circulation. Staggard wind end construction is made to enable reaming in and out of the hole.

The Hinderliter rotary eccentric circulating and releasing overshot is designed to engage, pack off for circulation and remove in one operation, drill pipe that has become parted in the hole. Engagement is of slip type construction and the operation of packing off is effected by engagement of the slips and under load stress, actuates expansion of the cylindrical rubber rings thus affording the uninterrupted process of circulation. Rotating the fishing string disengages the fish. The long tapered eccentric bottom is used to straighten up object pipe that has fallen over in the wall.

Safety Service

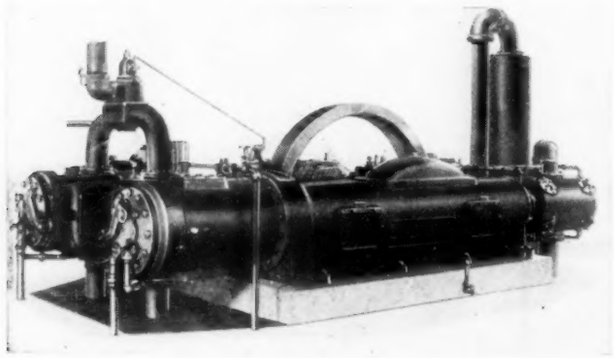
The Mid-Continent Oil & Gas Association offers to member companies a safety service which reflects the high ideals of the Petroleum Industry

(This space contributed by a member company)

Ingersoll-Rand Company

COMPRESSORS

Ingersoll-Rand Company is featuring two gas-engine-driven compressors, in operation, the type "XG" and type "XOG," the duplex type consisting of four-stroke-cycle power cylinders direct-connected to compression cylinders. Furnished either single stage or two stage, the compressors have been designed especially for oil field service.



Ingersoll-Rand Type "XG"

A feature of these machines is the interchangeability of the power end parts, as to cylinders, heads, pistons and rods, on each unit. The power cylinders are reversible and permit of either top or bottom exhaust.

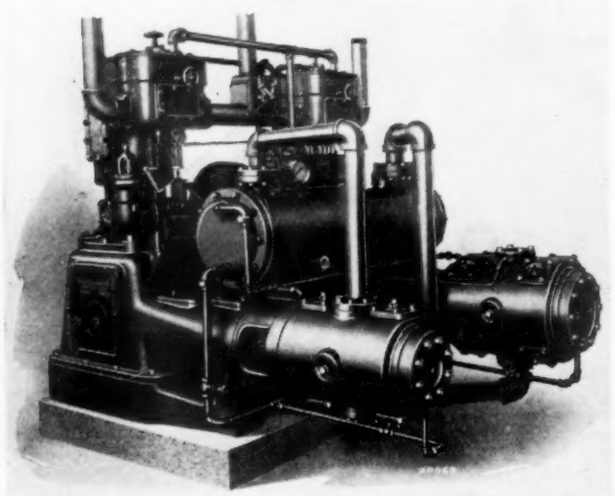
The compression cylinders can be supplied for any desired operating pressure, or for vacuum service.

By using hand-adjustable clearance pockets and valve lifters in the compression cylinders, the full rated horsepower is obtainable in compressor capacity through a wide range of intake and discharge pressures, without the necessity of shutting down the machine.

The horizontal unit, Type "XG", is of the four-corner type of construction and is rated at 180 horsepower.

Type "XOG" has vertical power cylinders and horizontal compression cylinders, and is rated at 90 horsepower. This unit can be transported by truck, when completely assebled, and requires only six cubic yards of concrete for foundation on good, average ground. It can be mounted on timber sills for temporary or semi-permanent service.

The advantages of these compressors as emphasized by the manufacturer are their simplicity of assembling, operating, and repairing; their conservative ratings, which ensure ample reserve power; their compactness and accessibility; and their adaptability to varying loads and speeds.



Ingersoll-Rand Type "XOG"

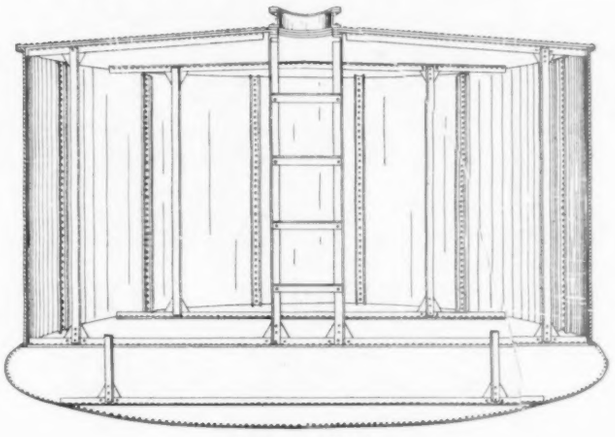
Maloney Tank Manufacturing Company

TANKS

The Maloney Tank Manufacturing Company of Tulsa, is showing a half section of one of its vapor pressure tanks.

It illustrates the heavy reinforcement on the inside of this type of tank and also the character and thickness of the sheets out of which the tank is made. This type of tank holds a vapor pressure of 16 ounces and in this way minimizes the breathing losses, during the hot season and also maintains the well gravity of the crude, thus enabling the producer to secure the maximum price for his crude.

All the tanks are equipped with the latest vacuum pressure valves, relieving at 16 ounces of pressure and from ½ to one ounce of vacuum. All their tanks are manufactured of Keystone copper steel, which is highly rust and corrosion resistant. Their bolts are a special type of bolt and are manufactured under the Smith process and are of 90,000 pounds tensile strength. The cloth inserted rubber packing is a specially designed packing for bolted tank storage and has been used very successfully for the past three years.



Maloney Tank

There are two Maloney tanks in operation at the automatic pump station in the exhibit of the technical and scientific committee on automatically controlled pumping stations, on the grounds of the exposition, on the south side of the Technical Building.

The Smallamatic Company

AUTOMATIC FLOWING DEVICES

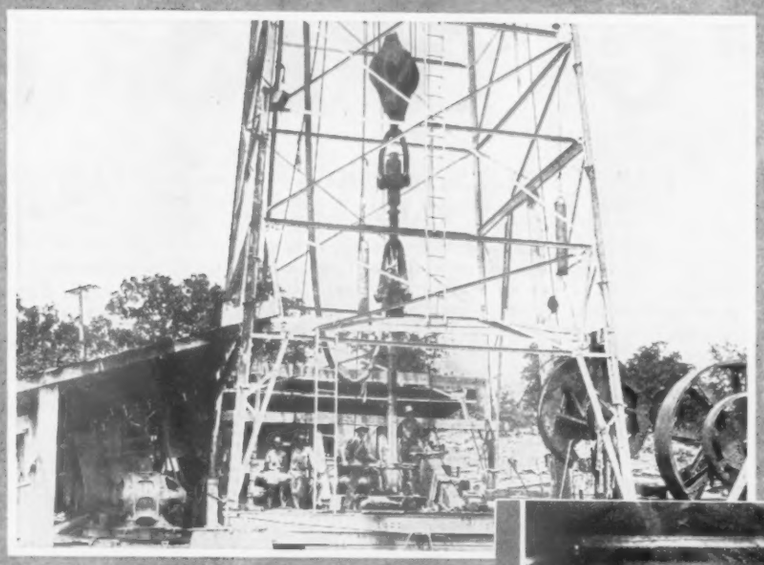
The Smallamatic Company of Tulsa is displaying the latest development in their automatic flowing device.

Gas or air is used as the lifting medium and either the displacement or air lift method may be employed.

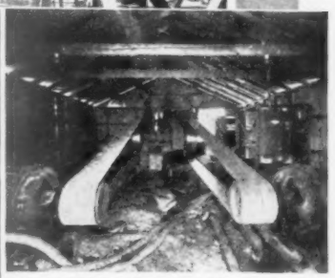
A closed trap consisting of 20 to 80 feet of liner pipe swaged to a standing valve at the bottom is used in the well, so that no pressure is placed on the sand. Flow from the well is controlled by the fluid level and is automatically maintained between a maximum and minimum that is best suited to the individual well.

A Smallamatic in actual field operation is being shown at the exposition in outside space "D."

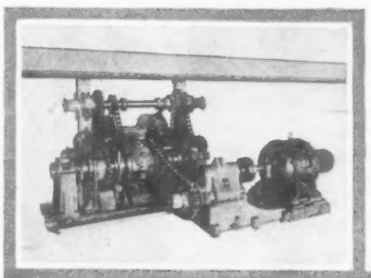
The WORLD'S *Deepest* CABLE TOOL OIL WELL WAS *Electrically Drilled*



Typical installation of Halliburton drilling control and Westinghouse motor-driven mud pump.



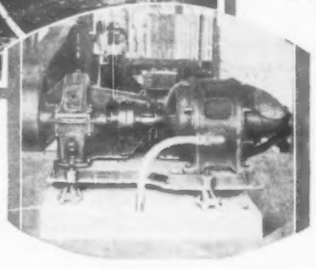
Westinghouse twin-motor drilling installation which drilled world's deepest cable tool well.



Above—Halliburton drive, automatic feed, for rotary drilling.

Right—Installation of Hild drive, automatic feed, for rotary drilling.

Right—Westinghouse-Nuttall two-speed pumping motor and single reduction gear.



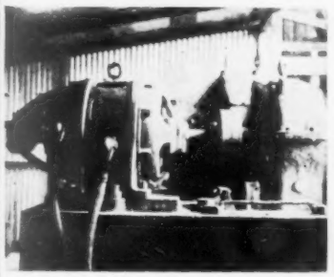
LOOK behind the achievements with which electricity has been identified and you will find Westinghouse equipment at almost every turn.

Westinghouse engineers were quick to answer oil field problems with equipment especially designed for its task. The twin motor drive for cable tool drilling is exclusively theirs. They co-operated in the development of the Hild and Halliburton drives, with automatic feed, for rotary drilling. They introduced practical two-speed motors for pumping. They brought reduction gears with change-gear feature; developed practical arc-welding equipment; perfected rig lighting units, change house heaters, portable transformers.

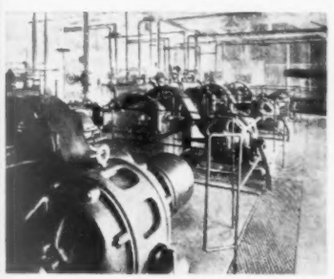
And to answer the ever imperative need for promptness in service they established complete service shops within overnight shipping distance from every installation of Westinghouse equipment.

* * *

Information regarding Westinghouse equipment for the oil industry may be obtained from any branch of the National Supply Companies or the Oil Well Supply Company, located in all oil fields, or from any Westinghouse district office.



Westinghouse-Nuttall two-speed pumping motor and double reduction gear unit.



Westinghouse CS motors driving compressors in air and gas lift station.

Westinghouse

T 30843

[This order often comes to the TEXAS IRON WORKS from major oil companies when they want Packers set; when they want expert assistance in solving many difficult well problems.]

"Go Out On the Job

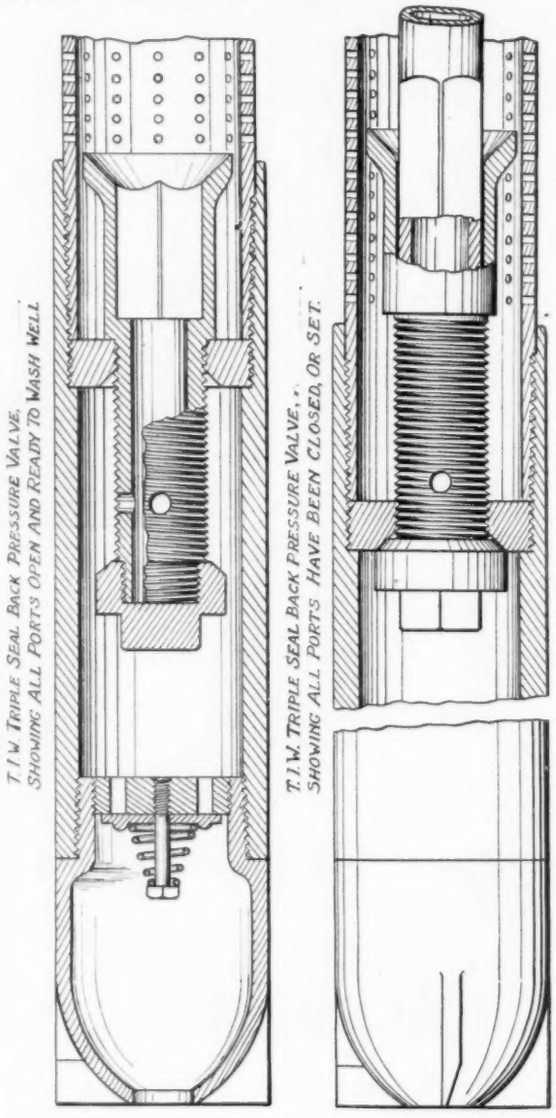
T-I-W TRIPLE SEAL BACK PRESSURE VALVE

1. A positive seal because it screws shut. Seating of valve does not depend on springs. No trash or sand can obstruct proper seating of valve. If trash goes through port holes, it goes on out; if it hangs in hole, it is sheared off when the hole passes through the ring as it is being screwed shut.

2. It seals three ways: holes are above ring when closed; threads on valve stem seal it; tapered seat on bottom of valve stem coming in contact with tapered seat on ring.

3. Valve is closed with the same operation of turning loose from Packer.

4. Lower flapper valve is used only to keep back pressure from coming back through wash pipe when going in the hole with the screen.



T I W Triple Seal Back Pressure Valve. Showing all ports open and ready to wash well.

T.I.W. Triple Seal Back Pressure Valve, Showing all ports have been closed, or set.

T-I-W ROTARY FRICTION SLIPS

Will not cut or swedge pipe

Note in the illustration that there are no teeth to sharpen. The rings you see in the picture are not teeth, but mud rings three-eighths of an inch wide O.D. and one-fourth of an inch wide where they come in contact with the pipe.

That these slips will not injure pipe has been positively proven by long experience by major companies and contractors. Strings of drill pipe have been handled by these slips in a half dozen wells as deep as five and six thousand feet without the slightest cut or bruise, not even on the grey-hounds; and the slips were in just as good condition as the day they left our plant.

Will Not Swedge or Cut Pipe

NO TEETH TO RESHARPEN GIVES LONG LIFE

Due to the fact that there are no teeth to resharpen, and to accurately machined construction from the very best heat treated steel, these slips, according to conservative estimates of users, are built to outlast several pairs of other makes.

FASTER AND EASIER TO HANDLE

One man can easily handle these slips as they are light and assembled in one piece.

All segments are held evenly when engaged with the pipe.

They are easy to put in rotary when pipe is not hanging true. It is not necessary to pry pipe over with a bar.

Fishing jobs are eliminated where other slips cut and crush the pipe.

T-I-W Slips are fourteen inches long. Their three-piece construction provides a uniform grip around the pipe for a distance of twelve inches.

Made in all sizes.

Write for price list. Give make, style and size of your rotary.

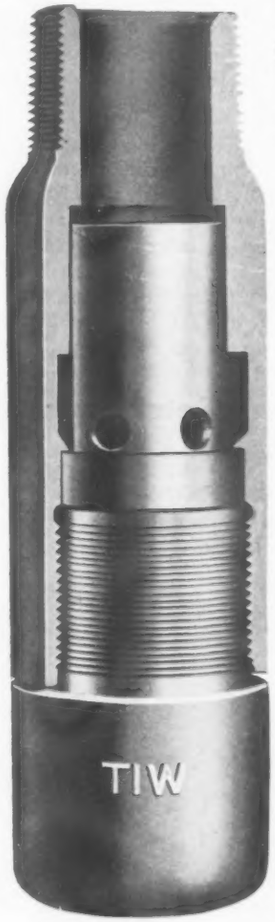
[The proving ground for T-I-W Products is the oil field. T-I-W Products are built by oil men of long successful experience. With T-I-W Products goes a plus value — *"The Best Oil Field Service."*]

and Assist Us"

T-I-W LINER PACKER
and Liner Packer Setting Tools

CAN GET LOOSE, NO MATTER HOW LITTLE SCREEN IS SET: For example, easily gotten loose from one joint of screen in a 5,000-foot well at Pierce Junction. Invaluable for testing wells in new territory as this Packer can be set and removed so easily.

ASSURANCE WILL PACK OFF: No guess work. The operator knows definitely that his liner is on the bottom and perfectly set.



Patent Pending
The Drano Standing Valve Assembled

OPERATOR IS SURE THAT HE HAS CANVAS ENOUGH LEFT ON THE PACKER: He can determine exact amount of expansion of Packer by measuring drop of drill stem.

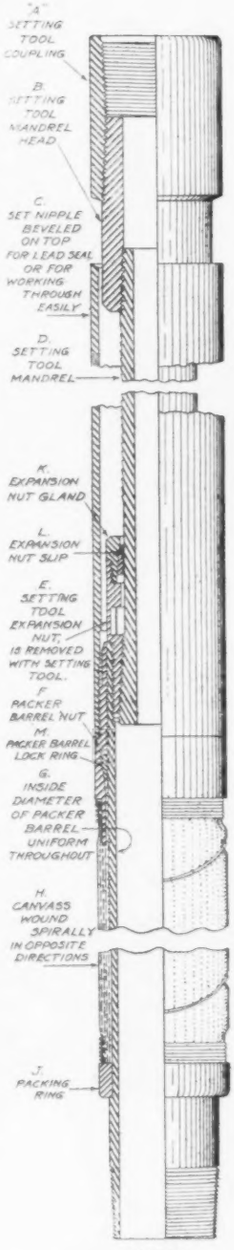
PACKER CAN BE TESTED WITH PUMP TO MAKE SURE OF SEAT: *A check up by one of the Major Oil Companies* revealed that out of 600, only 2 leaked . . .

4 TO 1 SAFETY FACTOR AS REGARDS STRENGTH AND DURABILITY.

CANVAS WOUND SPIRALLY, SO THAT WHEN COMPRESSED, IT AUTOMATICALLY INCREASES IN DIAMETER.

EXPERIENCED WELL MEN TO SET PACKERS WHEN REQUESTED.

Write for Folder.


"A" SETTING TOOL COUPLING
B. SETTING TOOL MANDREL HEAD
C. SET NIPPLE BEVELED ON TOP FOR LEAD SEAL OR FOR WORKING THROUGH EASILY
D. SETTING TOOL MANDREL
K. EXPANSION NUT GLAND
L. EXPANSION NUT SLIP
E. SETTING TOOL EXPANSION NUT, IS REMOVED WITH SETTING TOOL.
F. PACKER BARREL NUT
M. PACKER BARREL LOCK RING
G. INSIDE DIAMETER OF PACKER BARREL UNIFORM THROUGHOUT
H. CANVASS WOUND SPIRALLY IN OPPOSITE DIRECTIONS
J. PACKING RING
PATENTED

T.I.W. LINER PACKER AND SETTING TOOL, ASSEMBLED

T-I-W DRANO STANDING VALVE

Over - size — Long - life —
Positive Tubing Drain

GREATER FLUID CAPACITY than any other valve of comparative size, due to the short travel of the sleeve.

POSITIVELY DRAINS THE TUBING: When a tubing job is necessary, the spear is dropped from the casing head shattering the bottom of the monel iron sleeve, giving a dry tubing job every time.

SMOOTH ACTION — NO POUNDING: Cuts down tubing jobs. Eliminates the constant pounding that comes from the ball type valve and that is communicated to every rod in the string causing breaks and parts.

NON-CORROSIVE AND NON-MAGNETIC.

SAVES POWER-MONEY: Cost per k.w.h. is governed by the "demand rate" which is established by the "peak" or highest load to which a motor is subjected. Tests have shown that the pulling of a wet string of tubing increases the k.w.h. demand 25% as compared with pulling a dry string of tubing. Because it gives you a dry tubing job, the *T-I-W Drano Standing Valve* will cut down your power bills.

Write for price list and folder.

TEXAS IRON WORKS
SALES CORPORATION

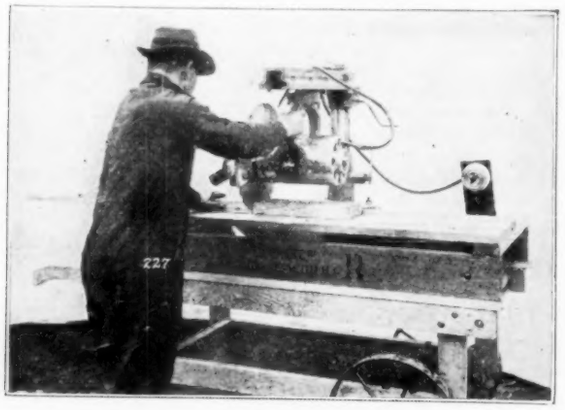
1401-1423 *Maury Street* HOUSTON, TEXAS

DeWalt Products Corporation

MODEL "D" WONDER-WORKER

The DeWalt Products Corporation, Leola, Pennsylvania, is exhibiting this year for the first time the new Model "D" wonder-workers, an addition to the line of electric woodworkers.

The Model "D" wonder-worker represents an improvement over former models, offering the delivery of 50 per cent. more power, whether ripping, cross-cutting, mitering, beveling or any of the 29 other operations done with this one machine by various tool attachments.



DeWalt Model D

It is powered by a two or three phase, five horse power motor, which is designed to develop results in greater power and less temperature rise. The machine is said to rip four foot fir at the rate of 50 lineal feet per minute and cross-cuts six-foot material, and can be instantly switched from cross-cutting to ripping without turning off the power. The cutting tool is completely guarded in all positions.

Another improvement in this model is the placement of the dial plate with degree markings and pitch scale out in front of the operator for easy adjustment for angle or bevel cutting. This dial plate is notched at each 45 degrees for the quick finding of such angles.

Model "D" is portable, weighing only 340 pounds, and is fitted on a table, 29x59 feet, that can easily be handled by two men.

Walter O'Bannon Company

CROLAY TUBES

Walter O'Bannon Company of Tulsa is featuring this year the O'Bannon CroLay tube, a product made to withstand corosion and rust. The tube has a thin layer of hard metal distributed evenly over the inside surface, yet retains its original polished interior. The material has been proved resistant to wear and corrosion, is described by the manufacturers as being harder than any oil sand and smoother than polished steel or cast iron.

The O'Bannon liner barrels equipped with CroLay tubes are now furnished in two sizes, the two inches by six feet and the two and one-half inches by nine feet.

CHROMALLOY BALL AND SEAT

Another product being featured by this company is the Chromalloy ball and seat, which will be shown together with samples of equipment that show the effect of corrosive elements on susceptible material. This product was introduced early this year by Walter O'Bannon Company.

Linde Air Products Company

WELDING EQUIPMENT

The Linde Air Products Company of New York features the daily contest in which every visitor at the Linde booth is given an opportunity to estimate the tensile strength of welded coupons made with Oxweld No. 1 high test rod. Five of these coupons are welded each day and used in the contest which is open to the public. Each evening these coupons are pulled on a tensile testing machine, and the person guessing nearest to the actual strength of the welds receives a prize.

The tensile testing machine being used in conjunction with the live demonstration of Oxweld No. 1 High Test Rod is a recent development of the Union Carbide and Carbon Research Laboratories, Inc., Long Island City. It weighs less than 200 pounds and is portable. Readings can be taken directly from the gauge. It has a capacity of 40,000 pounds.

The usual complete line of oil field welding and cutting equipment is on display at the Linde booths, including the Oxweld Type M. P.-2 acetylene generator; Model B corbic generator; complete C-14 cutting outfits; two wheel trucks with 14 and 24 inch wheels; a five cylinder exygen manifold; carbic floodlights of various sizes; Union carbide; and carbic cakes. A complete line of rods, fluxes, goggles and other welding accessories make up the balance of the exhibit.

Pittsburgh Equitable Meter Company

METERS

The Pittsburgh Equitable Meter Company has on display several of the new improved orifice meters both cut away and in operation. Both Emco low pressure and high pressure balanced valve regulators with cut away sections showing the removable valve seats and valve bowls are on display.

Pittsburgh Meter

Among other items shown will be Emco and Ironclad domestic meters, Emco large capacity meter with combined record gauge, domestic regulators, flow controllers, oil meters for corrosive oils and water meters for various types of service.

Besides featuring the improved Emco orifice meter, there is on display a gasoline service station meter which is widely used in the east for dispensing gasoline. Emco high and low pressure regulators, widely applicable for use in natural gas fields, are shown with the removable valve bowl which makes the regulator accessible and easily serviced. Other equipment being exhibited includes: No. 0 Emco meter of the display type in operation with glass sides and top showing the mechanism; No. 1 Iron Clad meter with the ring type diaphragm; the two-inch Emco flow controller; No. 2½ Emco large capacity meter equipped with the combined recording gauge; a 1¼-inch Eureka VP meter used in connection with filling station pumps to check total sales daily, weekly or monthly; and a one-inch HP oil meter for measuring all kinds of oils and gasolines.

A Perfectly Sealed Well where Oilmax is Used

Says this Field Supt.

Mr. E. P. Wyman's experience, as told in his letter to the right, is representative of the results oil men everywhere are getting with Oilmax Cement.

Oilmax is a specially-processed, quick-hardening cement for cementing oil wells. It gets as hard in 24 hours as ordinary cement in 10 days. It requires no accelerators or admixtures. It will produce, with 50% water by weight, in excess of 1500 pounds compressive strength in 24 hours — in excess of 2500 pounds in 48 hours—and have an ultimate strength of over 5000 pounds per square inch.

Produced ONLY by
ASH GROVE LIME & PORTLAND CEMENT CO.
Founded in 1882
Kansas City, Mo. Omaha, Nebr.
District Sales Office:
OKLAHOMA CITY, OKLA.
Phone Maple 0642

Majestic Development Company
Muskegon, Michigan

May 17, 1929

Ash Grove Lime and Portland Cement Co.,
Kansas City, Mo.

Gentlemen:

I feel that I have an apology to make you for not having made some expression of appreciation before this late date, but I want you to know that I, and I am speaking for the Company that I represent as well, appreciate the merits of Oilmax Cement which we used on the three wells that we drilled last month.

The work was done quickly, and is, I am satisfied, a perfectly sealed well where Oilmax is used. I have recommended Oilmax Cement to our associate companies and they too have found that it pays while mudding has proven to be treacherous.

Yours sincerely,

Majestic Development Co.

E. P. Wyman

Field Supt.

VEL:EPW
386 Ottawa St.

P. S. We expect to finish three more wells this month and our program calls for Oilmax on all of them.

EPW

OILMAX CEMENT
FOR CEMENTING OIL WELLS

Photos to right and below show wells of the Majestic Development Co. in the Muskegan Field which have been cemented with Oilmax.
(2917)

Barber-Greene Company

PIPE LINE DITCHERS

The Barber-Greene Company is featuring the use of the pipe line special ditcher, which offers some new improvements over the past models of the company this year.

The outstanding feature of the B-G pipe line special is the vertical boom. By means of the vertical boom, the ditcher can dig the trench with abrupt ends, leaving no dirt to be cleaned out by hand, and can start a cut straight down.

Barber-Greene Ditcher

The operation of the ditcher is protected by the automatic safety sprocket on the head shaft. When the digging teeth strike some obstacle under ground which is too great to be moved, this sprocket slips, automatically stopping the action of the bucket line until the obstacle is removed; or, if the obstacle is too big, the machine may be kept running, and the buckets will maintain a milling action against it until it is dug through. The automatic safety sprocket prevents twist and strain upon the machine and protects underground pipes, as well.

The B-G ditcher is full crawler mounted, on an oscillating axle, which insures the machine keeping on an even keel when traversing rough ground. The fact that use is made of an oscillating axle also insures full traction on both crawlers.

The Barber-Greene ditcher is built to ride the pipe, and its crawlers enable it to get on and off the pipe without difficulty.

The pipe line ditcher will dig a ditch from 12 inches to 24 inches wide, five feet six inches deep. It has 30 different digging speeds.

American Hammered Piston Ring Company

RINGS

The American Hammered Piston Ring Company, Baltimore, is exhibiting a complete line of piston rings. Besides the standard product, a single piece concentric hammered piston ring, there is the ventilated oil control ring demonstrated by a machine showing exactly how this ring functions in an engine. A hammering machine is operating to show the company's patented method of hammering. Several types of oil control rings are being shown, patented two-piece seal rings, Cronin inner seal rings, Daros duplex, and wearing rings, and two and three-piece compressor rings are on display. Five different analyses of cast iron are poured daily, varying from the close grained long wearing airplane ring iron to the self lubricating "S" iron for ammonia compressors. The company's bronze rings for water pumps and acid resisting rings for severe gas conditions are shown, and the company is exhibiting its patented rod packing which uses hammered contracting rings instead of springs.

B. V. Emery & Company

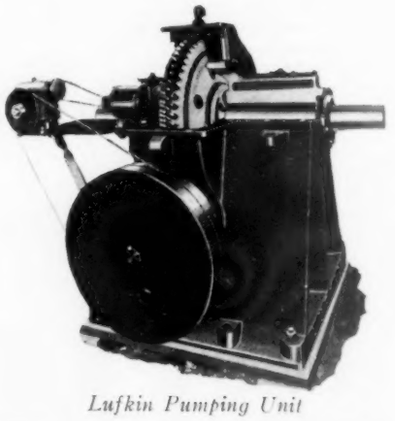
FLANGES

B. V. Emery & Company, Tulsa, is displaying a flange designed to duplicate the conditions existing in the ordinary orifice flange and which enables the orifice plate to be changed without the use of a by-pass.

Emery Flanges

Construction is such that the plate is clamped between two finished surfaces in such a manner that the regular thin orifice plate can be used without danger of plate distortion. The use of the regular thin plates results in a low plate cost. The three jack screws shown in the accompanying illustration do not bear directly against the plate, but rather against a tight-fitting moveable ring which clamps the plate between the two halves of a regular orifice flange union.

The same jack screws which clamp the plate in position also are used to seal off the plate when it is raised to the upper part of the flange, thus allowing a new plate to be inserted without leakage.



Lufkin Pumping Unit

Lufkin Foundry & Machine Company

WORM GEAR PUMPING UNIT

Lufkin Foundry & Machine Company, Lufkin, Texas, is this year featuring the Lufkin work gear pumping unit, cut-away standard 4½-inch unit driven by a one-sixth horsepower motor using a common fish line for belt or power transmission.

The idea of this cut-away unit, which is a regular unit taken from stock, is to demonstrate the ease with which the unit operates, the small power required for its operation made possible by the liberal use of Timken and Hyatt roller bearings together with large rugged crank shaft bearings. The efficient oiling system of the Lufkin unit is also revealed in the cut-away model.

CENTER IRON

The new Lufkin Trout patented center iron will also be on exhibition. This new center iron has renewable liner type bearings, is entirely dust proof and oil tight, and has sufficient oil capacity so that attention to this bearing is seldom required.

Performance

the test that always proves the superior qualities of

TITAN

Titan is the hardest metal known. By a special, controlled process of manufacture, absolutely uniform metal is produced in graded sizes, to meet varied individual needs. When properly applied to bits of any type, maximum runs and fewer round trips result.

In many instances Titanized bits have made more than one thousand feet of hole.

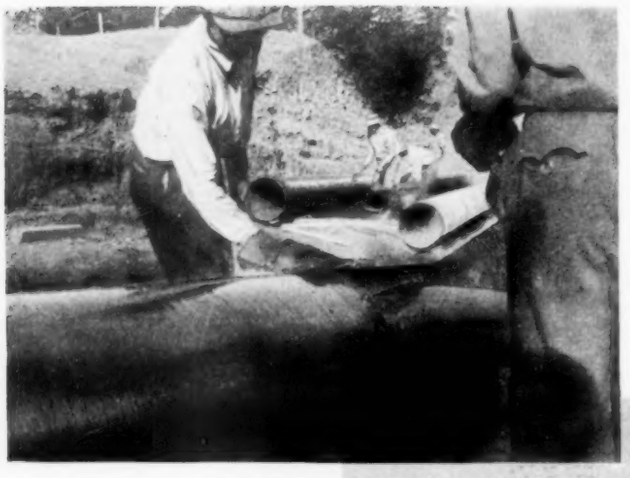
Titan Metal Compound has no equal as a facing material.

The manufacture of Titan Metal is fully covered by patents. Infringements will be prosecuted.

MILLS ALLOYS, INC.
3202 So. San Pedro Street, Los Angeles, California.

TITAN METAL

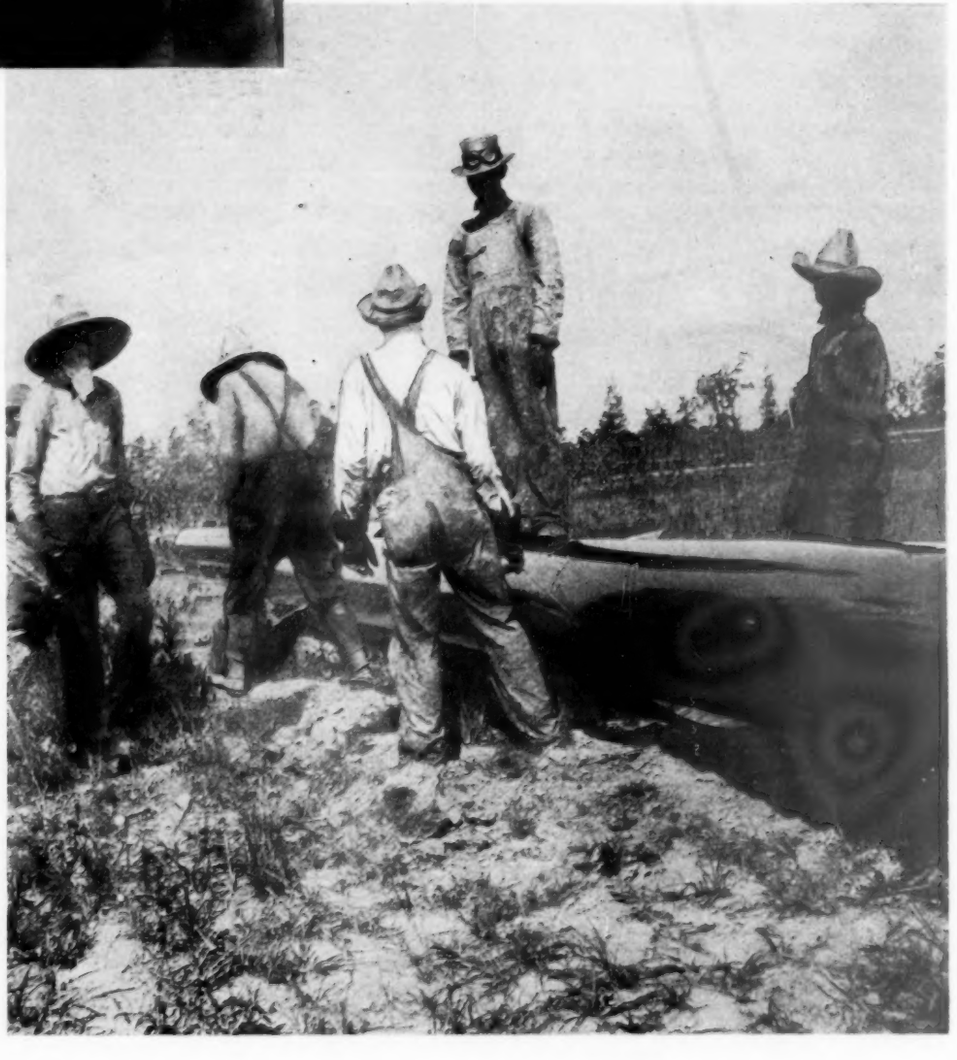
BARRETT ANTI-CORROSION SPECIFICATIONS include { 1 2 3



Revolving pipe method of applying Barrett Pipe Enamel. Pipe turns away from pouring operation and the "pad" held by operator on opposite side spreads the coating to an even flow.

TO give pipe lines the best protection over the longest period of years, three important points to be considered are:

What underground waterproofing materials make the strongest protection against corrosion? What methods of application will insure both thoroughness and speed? What company is best equipped to give these—along with vigilant inspection and close co-operation?



Sling or "granny rag" method of applying Barrett Pipe Enamel.

– the greatest known waterproofing agent – proven methods of application – Barrett inspection!

(First) **The waterproofing materials used with Barrett Anti-Corrosion Specifications have as their *base* the greatest known waterproofing agent — the finest coal-tar pitch with long-tested solvents, binders, etc., added. Non-porous, non-absorbent, chemically inert and highly dielectric, this coating defies every destructive hazard likely to be met with in the field.**

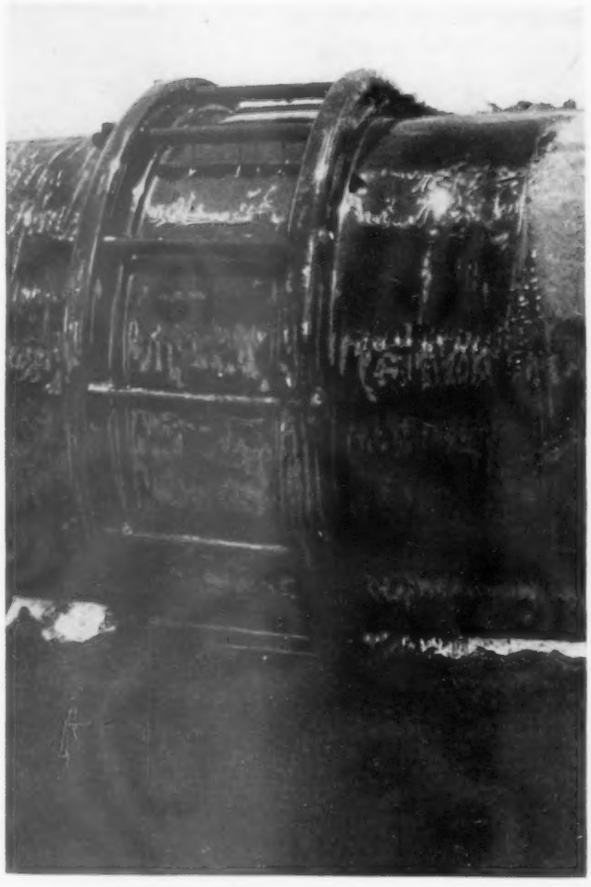
(Second) **Barrett Anti-Corrosion Specifications are the result of 75 years' experience in the waterproofing and weatherproofing business, producing such outstanding successes in this line as Barrett underground waterproofings, Tarvia, Barrett Specification Roofs and Carbosota.**

(And Third) **The Barrett Company has for years jealously maintained its exceptional reputation for *service and inspection.* You are assured the closest and fullest cooperation from beginning to end of the job. In making quantity surveys, particular specifications and in every other way, Barrett engineers, chemists and other experts are at all times available to you. For any information on pipe line protection you are invited to phone, wire or write: The Barrett Company, 40 Rector Street, New York.**

BARRETT ANTI-CORROSION SPECIFICATIONS

Barrett Pipe Line Primer — Barrett Pipe Line Felts
Barrett Pipe Enamel — Barrett Coupler Compound
Barrett Cold-Coater

The waterproofing agents used with Barrett Anti-Corrosion Specifications are produced from the finest grades of straight-run coal-tar pitch combined with proper solvents, binders, etc. Made to meet all the many different conditions of pipe line construction, Barrett Anti-Corrosion Specifications include reinforced enamel for rivers, swamps and other extreme conditions; enamels to be applied hot in less corrosive sections; cold applications for still less corrosive parts.



Close-up showing coupled sections of pipe, coated with Barrett Coupler Compound.

The Barrett Company

40 Rector St., New York

Dearborn Chemical Company

NO-OX-ID

Dearborn Chemical Company, Chicago, is featuring No-Ox-Id, a chemically compounded rust preventative, and especially the new product presenting the two new consistencies of No-Ox-Id, which have been developed for pipe line work based upon experience in the oil fields. These new consistencies are known as "G" and "G Special," both of which make application without heat possible at ordinary temperatures, reducing labor and equipment needed, and also reducing fire hazards. The new consistencies offer a more dense body as a coating and material that will thoroughly wet the metal surface and keep it wet with No-Ox-Id over a long period.

NO-OX-ID WRAPPERS

No-Ox-Id-ized Brown fabric wrapper, an asbestos wrapper impregnated and coated with No-Ox-Id, is gray in color. It has been adopted after several years of service underground in severe conditions.

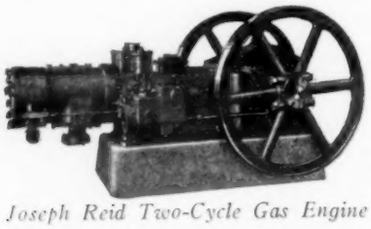
No-Ox-Id-ized gray fabric wrapper chemically treated, is saturated and coated with the same gray No-Ox-Id as the asbestos wrapper.

On exhibit also at this company's booth is the Dearborn powdered and liquid cleaners.

Joseph Reid Gas Engine Company

GAS ENGINES

Two gas engines for oil country use are included in the exhibit of the Joseph Reid Gas Engine Company, the 45 horsepower Type C enclosed two cycle gas engine with



Joseph Reid Two-Cycle Gas Engine

the new number 55 heavy duty reverse rig, and the 40 horsepower type B enclosed four cycle gas engine with two pedestel bearing cut-off rig, the pedestel bearings being equipped with Reid Timken bearing pillow blocks.

One particular feature of the 45 horsepower type C engine is the new pressure oiling system. This system incorporates a pump, driven from the lay shaft by a train of gears running in oil, which takes oil from the reservoir in the bed, and delivers the oil under pressure to the main bearings, crank pin, and the cross-head. The oil forced between shaft and bearings floats the shaft for correct lubrication. The use of this system allows heavier loads to be carried over longer limits of time and permits overloads on reciprocating parts. The pump unit is self contained and readily accessible for removing should it be necessary. The new Number 55 reverse rig incorporates a five-inch wide clutch band, and a heavy duty brake wheel, the interior of which is accessible without removing any rig parts on the shaft.

The 40 horsepower type B four cycle engine has enclosed bed plate; machined main bearing housings that can be fitted with Timken roller bearings or replaceable steel-backed babbitted-lined shell bearings; Timken lay shaft bearings; enclosed governor of Reid design running in oil bath; and a mechanical lubrication system incorporating an oil purolator. Reid pillow blocks fitted with Timken bearings are a feature of the cut-off rig.

A complete line of Reid refinery look boxes, including the new Fulton type box with 12-inch weir and flanges for six-inch pipe, are also being shown in the exhibit.

International Filter Company

GAS PURIFIER

The International Filter Company, Chicago, is featuring the International gas purifiers, of which there is an operating model on display, together with a photographic display of the company's oil field water purification equipment installations.

The practical method of separating liquid impurities from vapor, involving their removal while vapor is in more or less rapid motion, is being shown. Purifiers for high and low pressure lines for gas and steam are being demonstrated.

Durametallic Corporation

ALL-METAL SPIRAL

The Durametallic Corporation, 806 Cobb Avenue, Kalamazoo, Michigan, is featuring the Durametallic spiral packing in three grades, as follows:

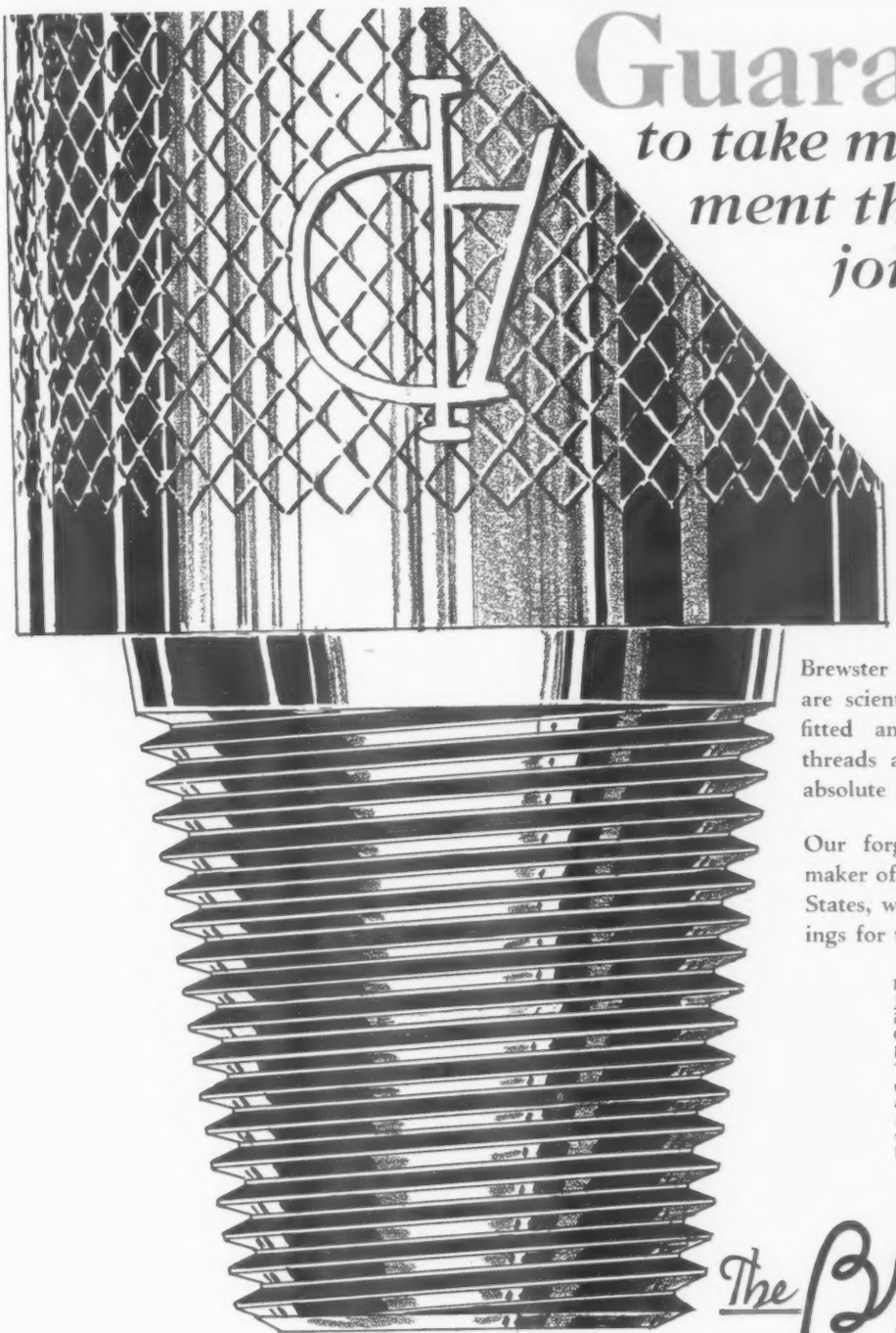
Grade B is made from lead or babbitt metal foil, which is lubricated with oil and graphite and then crinkled, rolled and moulded into a spiral. It is made to perform satisfactorily in temperatures as high as 350 degrees Fahrenheit. Grade D is made from an aluminum alloy foil, and is recommended for all grades of oil, being made to withstand the organic compounds in oil. It is given as satisfactory in hot oil in the presence of temperatures up to 1000 degrees and on steam as high as 750 degrees. Grade C is made in the same manner as the other grades except that B and D foil are united in equal areas to form the packing strand or spiral.

ELASTIC CORE

Elastic core packing, a new product of the company, is classified in grades B-10, 92 per cent asbestos; D-10, which is illustrated here, is recommended for high temperature and high pressure oil conditions; and C-10, which has 92 per cent asbestos core in the metal. The latter is recommended for service packing.

Dura plastic, 75 per cent pure asbestos and 25 per cent Durametallic metals; die-moulded rings and aluminum gaskets manufactured by the company are also being displayed.

Durametallic All-Metal Spiral Packing



Guaranteed

to take more punishment than any tool joint you have ever used

The power to withstand great punishment is built into Brewster A. P. I. Shouldered Tool Joints. In use by all drill pipe manufacturers, this same "V" type thread is naturally preferred because of its amazing durability.

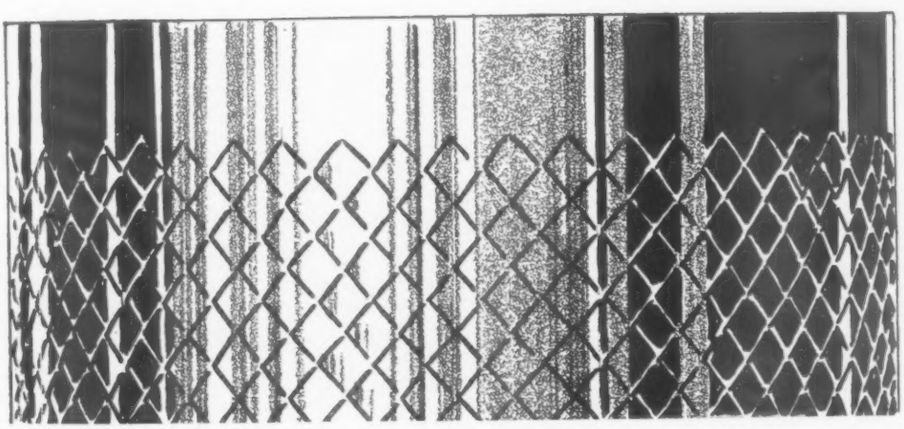
Brewster A. P. I. Shouldered Tool Joints are scientifically Heat Treated, perfectly fitted and thoroughly inspected. All threads are automatically milled, giving absolute accuracy.

Our forgings are made by the largest maker of tool joint forgings in the United States, who have made 90% of the forgings for the trade in the last ten years.

Besides A. P. I. Shouldered Tool Joints, BREWSTER PRODUCTS include: Perfection Core Barrel; Chrome Nickel Drill Collars; Six Blade Rock Bits; Special Fish Tail and Gumbo Bits; Core Barrel Cutter Heads for both hard and soft formations — the hard formation cutter heads are faced with a substance of diamond-like hardness.

The Brewster COMPANY~INC.

Shreveport, Louisiana



A complete stock carried at these branch warehouses: Oklahoma City—Red Ball, Inc., 2-4 E. California St., Phone W-3680; Houston — 2000 Harrington St., Phone Capitol-3021. *Distributors:* Wilson Supply Co., Houston and Beaumont, Texas; Murray-Brooks Hdw. Co., Lake Charles, La.; T. T. Word Supply Co., Houston, Texas and Lake Charles, La.; The Ellis Iron Works, Inc., El Dorado, Arkansas.

Baker Oil Tools, Inc.

COUNTERBALANCE

The Baker-Kammerer pitman weighted counterbalances wells from as shallow as 3000 feet to depths greater than is now being pumped. The weight is placed directly around the wrist pin, thus obtaining a true circular motion. It is fitted with a screw jack for easy removal of the balance from the pin, and, with the addition of the swivel saddle on the sampson post, the counterbalance is easily rolled directly out from the crank and the beam is swivelled out of the way of pulling operations in the rig.

COMBINATION DRILLING VALVE AND BLOWOUT PREVENTER

This is a compact unit combining a positive high-pressure flange type drilling valve and blowout preventer. The valve is fitted with six-inch circulating outlet and two three-inch flow line outlets. A manifold on the Christmas tree companion plate with a four-inch outlet is also provided. It provides for full control of the well, which may be flowed for test, shut in, or killed.

DUMP BAILER AND CEMENT SURE-SHOT PLUG

This equipment is used primarily for shutting off water above the oil sand, especially in cases where an oil sand has been drilled into before the hole was reduced, offering no shoulder on which to set casing.

CEMENT FLOATING, GUIDING AND CEMENTING EQUIPMENT

This line of equipment has cement or concrete substituted for cast iron. The concrete now used by Baker Oil Tools, Inc., has been increased in strength from the original 4115 pounds per square inch to 6002 pounds per square inch. In the floating equipment the valve, seat and ball check are made of coleron, which is easily drilled out to leave no refuse in the pipes. Baker Oil Tools, Inc., cement equipment line includes the Baker-Burch cement float shoe, Baker cement float collar, Baker-Burch side hole cement float shoe, Baker cement guide casing shoe, Baker cement baffle collar, and the Baker cement bull plug casing shoe.

HYDRAULIC CORE EXTRACTOR AND PRESSURE TESTING MACHINE

This product is a two-stage, hand-operated, high-pressure pump, developing 6000 pounds with the high-pressure piston. For lower pressures the low pressure piston is thrown into action by the simple quarter turn of a latch. The extractor and a barrel or bucket of water is all that is necessary to operate it. Attachments for extracting cores consist of a sub, fitted with both male and female threads for extracting the core from either end of the core barrel, and a core pusher plunger.

DRILL PIPE FLOAT

This equipment is designed for not only floating the drill pipe down the well safely, but it also prevents the plugging of the bit on the way down. If the bit strikes an unexpected bridge, it may be spudded through. The Baker drill pipe float is designed to prevent the loss of time incident to pulling the string to eliminate a plugged circulation, with the consequent wet job.

CEMENT HOOK-UP NO. 1

The Baker cement hook-up No. 1 was designed for cementing a combination job, or cementing through perforations, without the use of cast-iron plugs and valves. It consists of the Baker cement float collar, a five-foot nipple, perforated and carrying a canvas basket, which is welded to steel ribs, and below, a Baker cement solid baffle collar.

MARVEL SPIRAL GUIDE

The Yungling spiral guide is a device developed to meet the demand for a fishing tool that would operate effectively in bringing to the surface a parted drill string, even though the fish was leading at a considerable angle in a cave-in.

MARVEL SCREW GRAB

The Baker marvel screw grab has various types of jaws to accommodate the different sizes and shapes of fish, including the forked type of jaw, the short clam jaw, and straight jaw with wicker, and the clam type with wicker. It has been redesigned and is made to order in sizes to fit a 16-inch casing with an O.D. jaw spread of approximately 18⅝ inches.

STEEL ROTARY HOSE

The Baker all steel hose provides ample diameter to accommodate circulation, and a safety factor which is more than ample for the high pressure work of deep wells. It is equipped with universal joints of the wiping contact type, eliminating the necessity for packing and assuring joints with no leakage. These universal joints make possible the free and easy movement of the hose in all directions.

ROTARY CORE BARREL

The Baker rotary core barrel is announced after three years of experimental work and field testing. This core barrel embodies the advantage of a stationary inner or core retaining tube, to eliminate danger of damaging the core in bringing it to the surface.

An improved drilling shoe has also been designed for this rotary core barrel, giving a hole of full gage and eliminating the necessity of reaming. Circulation is forced out between the inner tube and the drill barrel, at the points of the drilling teeth, eliminating plugging of either the shoe or the barrel.

Sonner Burner Company

LOW PRESSURE GAS BURNER

The Perfecto Gas Burner, manufactured by the Sonner Burner Company, Winfield, Kansas, was first produced for oil field use four years ago. It is this year featured in the company's booth.

The burner consists of a section of 12 units bolted together, and small enough to be handled by one man. It is mounted on an adjustable hanger which is hung on the mud rim of firebox boilers or to the foundation of an HRT boiler, supporting the burners on a level, or where coal grates would be if the boiler was being fired with coal.

The feature of this burner is that it will fire a boiler to capacity on about one pound of gas, under usual field conditions, and that by increasing the number of sections, each of which are rated at 25 horsepower at the above pressure, or by slight increase in the pressure, the boiler can be fired at considerable overload.

The flame is uniformly distributed over the grate area, and is short enough so that no damage will come to the boiler from the use of the burner.

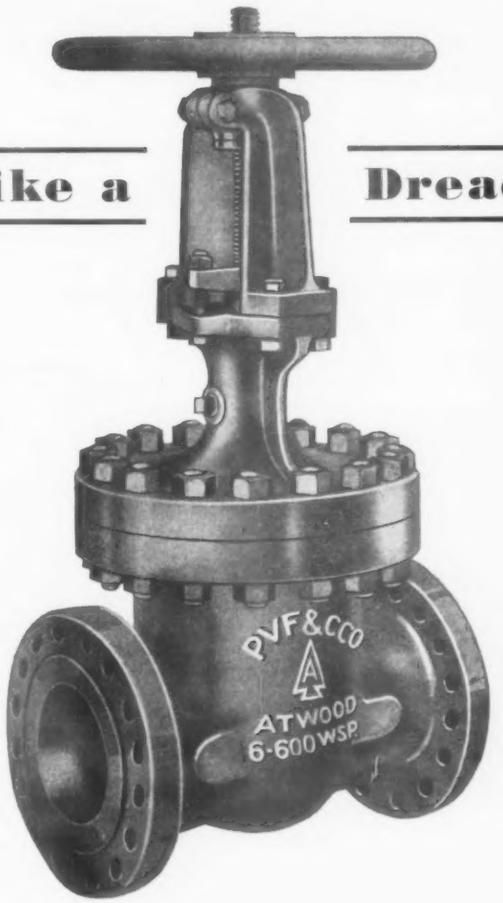
Another feature of the burner is that there is no tendency for the fire to roar nor for the boiler to vibrate even when an overload is carried.

After the burner sections are set in place all of the balance of the grate areas not occupied by the burner is closed off with fire brick, thus preventing columns of excess cold air to interfere.

Built like a Dreadnaught

ATWOOD

Electric Steel Oil and Gas Valves



6" (Series 60) working pressure, 600 lbs. for steam, 1000 lbs. for oil and gas, tested hydrostatically to 1500 lbs. Solid Wedge, ATWOOD Electric Steel, Stainless Steel, Monel or Bronze mountings.

BUILT for punishment, sturdy as a Dreadnaught, ATWOOD Electric Steel Oil and Gas Valves quite naturally are installed in Refineries and Oil and Gas Lines the world over.

Founders for more than a century, this company remains in front in this all-important phase of the industry. When you specify an ATWOOD you are assured the most enduring, the toughest valve produced today. Valve service depends upon the quality of the casting. ATWOOD quality —from ingot to final pressure test —is absolutely under the control of our Metallurgical Department.

Trade Mark
ATWOOD

The most advanced type valve to meet every Oil, Gas and Steam Line condition is listed in the ATWOOD Line, the result of 70 years' research in developing sizes and patterns apace with the industry. Mountings can be furnished in Monel, Stainless Steel or Bronze— as the service requires—and are fully guaranteed for that service.

Send for ATWOOD Oil and Gas Valve Bulletin 100.

PITTSBURGH VALVE, FOUNDRY & CONSTRUCTION CO.
PITTSBURGH ~ PENNA.

DISTRICT OFFICES

New York City	30 Church Street
Chicago, Ill.	80 East Jackson Blvd.
Boston, Mass.	185 Devonshire Street
Cleveland, Ohio	858 Rockefeller Bldg.
Dallas, Texas	1314 Southwestern Bldg.

REPRESENTATIVES

Detroit, Mich.	Garrett Burges, Inc., Woodbrook Bldg.
Houston, Texas	Maintenance Eng. Corp., 1400 Conti Street
Atlanta, Ga.	Moore-Broach Eng. Co., Forsyth Bldg.
Philadelphia, Penna.	R. J. Crozier Co., 10 South 18th Street
Los Angeles, Cal.	John G. Bell Co., 712 East Sixth Street
Toronto, Canada	A. G. Hill, 45 Jarvis Street

· · · VALVES ▲ WELDED PIPING ▲ FITTINGS · · ·

Southern Pine Association

DERRICK

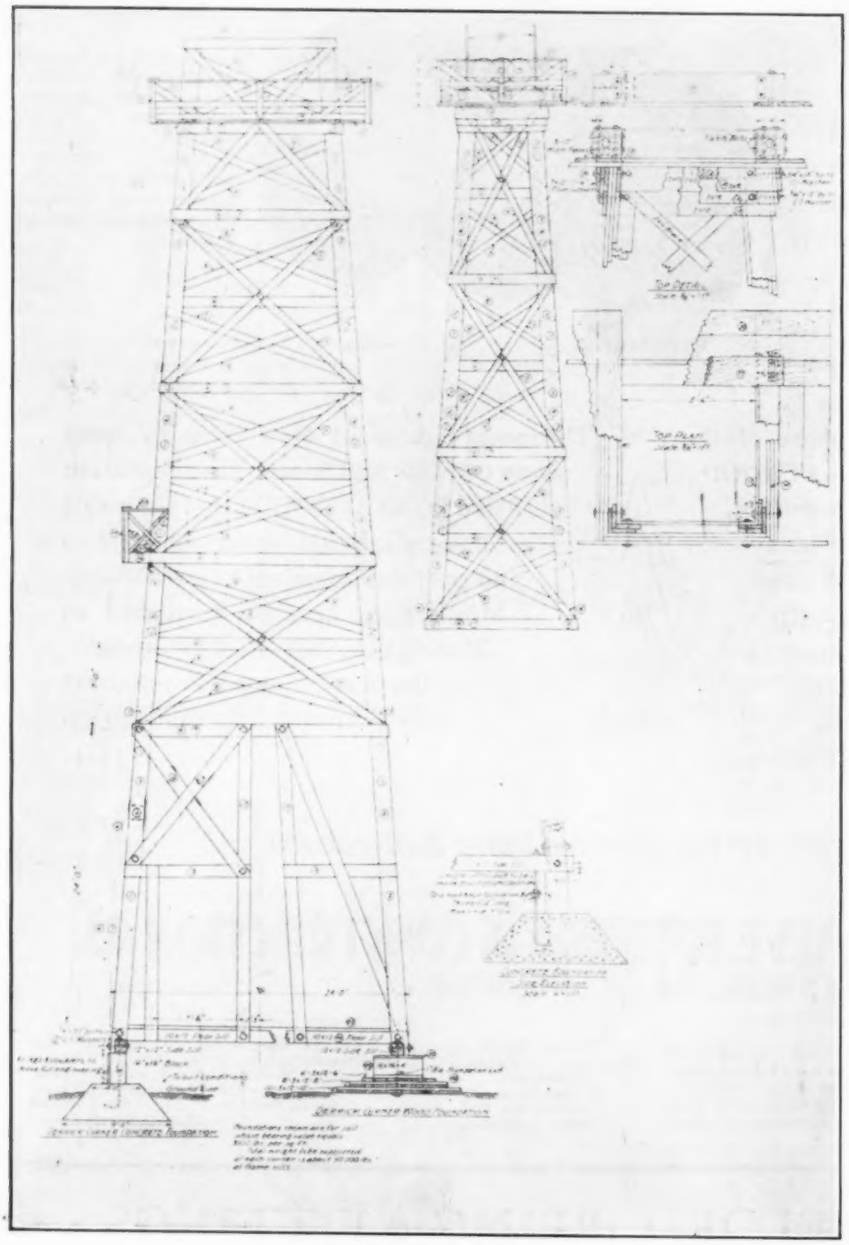
An all wood derrick of Southern pine is exhibited by the Southern Pine Association. It will be full sized—122 feet high, and is constructed to remain as a permanent exhibit.

Care is being taken in the construction of the derrick in order to make it an example of materials and workmanship readily available. The derrick is being built not as a model, but in the same manner which would be required if it was to be used in actual operations.

Long leaf Southern pine is required for the heavy duty structural members in accordance with specifications recommended for the use of oil field operators by engineers of the lumber sub-committee on the standardization of rigs and derricks of the American Petroleum Institute.

Timbers and lumber for the derrick are grade-marked and trade-marked according to Southern Pine Association standards which are in accordance with American lumber standards. By demonstrating the practicability of constructing a derrick with certified lumber, each piece bearing its exact grade and source of origin as well as in some cases, the species, the Southern Pine Association seeks to impress the operators with the availability of readily identified items for oil field requirements.

By introducing the use of grade-marked lumber for oil field usage, the organization has assisted many individual companies toward meeting their lumber needs, Failures of lumber as used in various parts of the derrick were traced definitely to the substitution of grades. The positive identification of each piece of lumber by the grade-marking process has eliminated this practice in all instances where the certified lumber has been required.



Southern Pine All-Wood Derrick

Axelson Machine Company

PUMPS AND FITTINGS

Axelson Machine Company has a large exhibit at the exposition, and the various field men of the organization from Mid-Continent and Gulf Coast fields are to be present.

A complete line of Axelson Pumps and fittings will be shown, including the various attachments and fittings such as the Barnwell plunger and the barrel bottom assembly. The different types of Axelson insert pumps will be shown as well as the regular and top collar both ends pumps. A new sucker slip and spider that has been recently introduced will be demonstrated.

John Zink Company

BURNERS

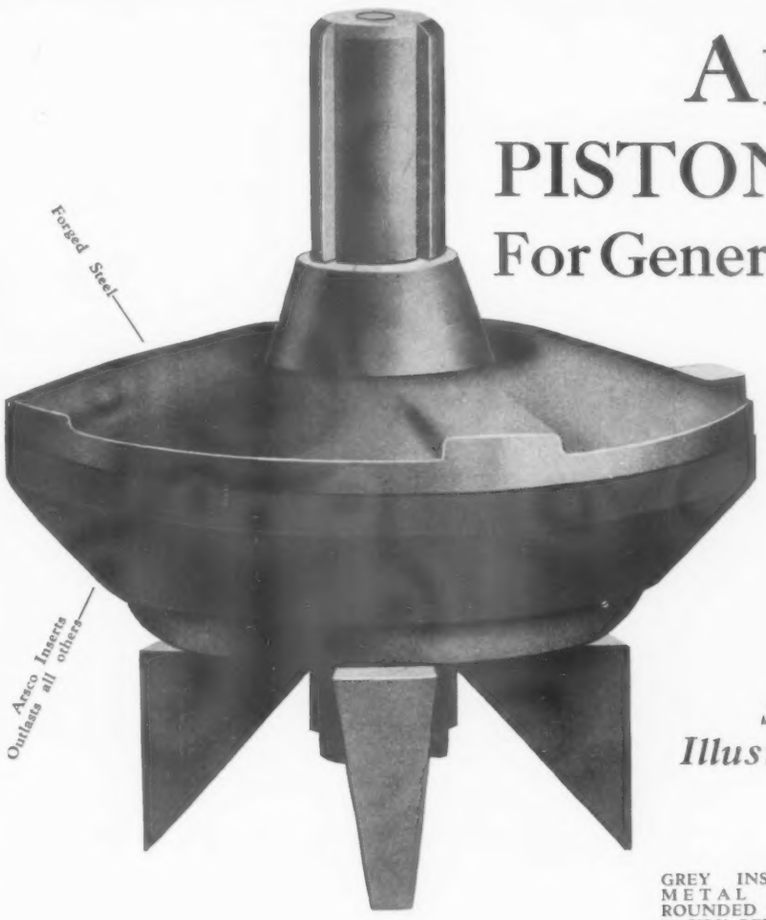
The John Zink Company, Tulsa, is this year exhibiting its line of burners, including flame burners, short flame burners and flameless burners.

Featured in this line is the horizontal bimix gas burner, which generates tremendous quantities of heat energy in small furnace volume with control over the amount of flame fire. As the name implies, this burner mixes the air and gas twice; first, in the atmospheric mixer; second, by the impinging jets on the radiating arms of the spreader.

The main air control door that slides on the gas supply line controls the air induced by the atmospheric mixer, the air induced by the impinging jets on the radiating arms and the air drawn in by the stack draft.

In firing boilers and stills at high ratings the operator can have control over the amount of flame fire. As the air control door on the atmospheric mixer in the yoke is opened the flame becomes shorter until complete combustion takes place instantly at the face of the impinging jet radiating arm spreader.

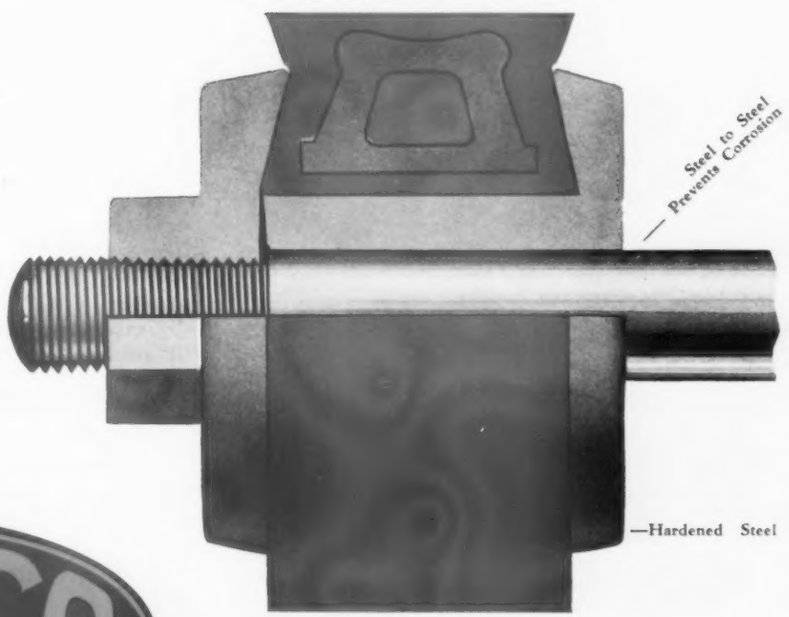
ARSCO PISTON & VALVE For General Oil Field Use



The most economical Piston and Valve on the market.

Send for Free Illustrated Catalogue

GREY INSERT BELOW SHOWS METAL REINFORCEMENT SURROUNDED BY LONG-LIFE RUBBER EASILY REPLACED AT LOW COST.



Fits any Pump. No Special Rods or Liners Required. Head and Follower Plate Never Wear Out. You buy only new rubbers which are inexpensive.

ARSCO INC.

HOUSTON, TEXAS
P. O. Box 276
Preston 1927-1814

National Tank Company

AIR-GAS LIFT INTERMITTER

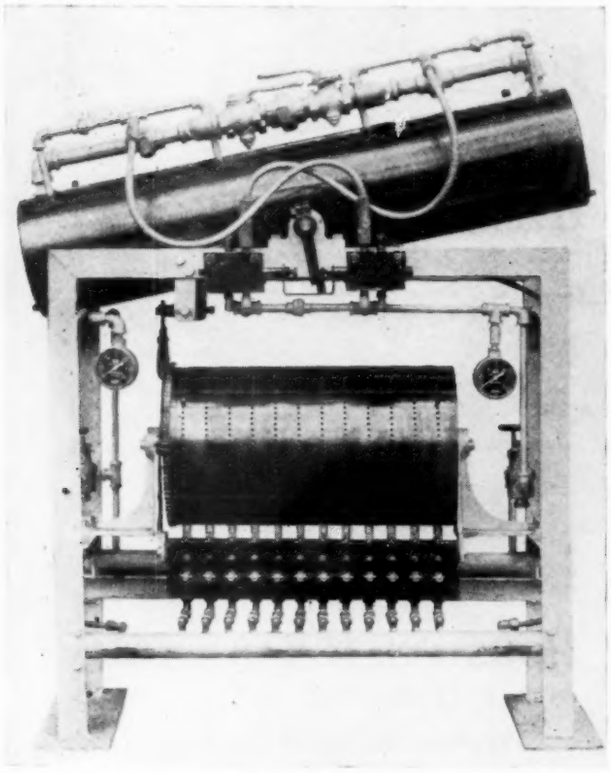
The National Tank Company of Tulsa is displaying a National automatic air-gas lift intermitter for automatically opening and closing diaphragm control valves in the lines from compressor plant to wells being flowed intermittently by air-gas lift.

The standard size National Intermitter is designed for operating up to 12 wells. The alternating "off" and "on" flow intervals of each well is set on the intermitter entirely independent of the flow intervals of any of the other wells. Thus it can be set so that the "on" interval will not begin on any two wells at the same time, thereby conserving compressor plant capacity. More than one well may be flowing at the same time, yet the volume of compressed air or gas required is not so great as when two or more wells are turned on at the same time. The "off" and "on" intervals on any of the wells may be set for as short or as long periods as required, the intervals may be only a few seconds or several hours. The intervals are easily adjusted on the machine and may be easily and permanently changed by increasing or decreasing the speed of the rocking or drive cylinder, or by inserting or removing pilot valve opening pegs.

The energy used to operate the Intermitter is taken from the main header from the compressors, or any available source. A pressure reducing regulator is used in the supply line to reduce the pressure of air or gas from the supply source to 100 pounds or less, before it is released to the machine. The Intermitter is equipped with additional regulators to further reduce the pressure to that required to operate the machine. The amount of air or gas required for operating the Intermitter and diaphragm controlled valves is so small that its cost is negligible.

The National Intermitter requires no outside source of operating power, no electricity, or continuous supply of water or other outside source of energy.

The National Intermitter is designed to operate at a minimum speed. Its proper operating speed is so low and the total time in motion, operating once per minute, would not exceed 20 minutes per 24 hours.



National Intermitter

Vickers Machine Works

RELEASING OVERSHOT

The releasing feature of the Vickers overshot is operated by a "J" tool device, employing an old principle of oil country equipment. It is simple, with few working parts.

The slips seat in the bowl with the "J" slots out of mesh when going into the hole or after the fish is engaged. The spring steel band around the slips holds them against the fish as the tool passes over it. At the first upward pull the slips seat in the bowl and bite deep into the fish.

If the driller finds it hard to pull his fish, he sets down in the hole and takes a slight turn to the left. The weight of the drill stem forces the slips upward in the bowl until the "J" slots are in juxtaposition, and the short turn to the left engages them. This leaves only the pressure of the band around the slips to hold them against the stuck pipe or other fish, and the tool readily releases.

There are only four essential parts to the Vivkers releasing overshot:

1—The top, which is steel forged, accurately machined, and threaded inside and out.

2—The slips, forged from steel, with sharp teeth at an efficient angle, carefully tempered. The slips are held together by a spring steel band, which prevents them from wedging, and makes the halves take hold promptly.

3—The bowl, forged from steel, tapered on the inside to provide a seat for the slips.

4—The bottom, which is simply a "shirt-tail" guide. The manufacturers are prepared to furnish milling tools, wall hooks, or any other type of bottom section desired for use with this overshot.

ADJUSTABLE WRIST PIN

The Vickers adjustable wrist pin has a tapered shank over which fits a steel split bushing. The bushing is tapered to fit the shank of the pin, so that the outside diameter of the assembly is the same at all points, to fit the hole in the crank. The two nuts are equipped with left-hand threads, so that the crank, as the pin hole wears, tends to loosen the rear nut and tighten the end nut, thereby expanding the tapered bushing and keeping the pin tight in the hole.

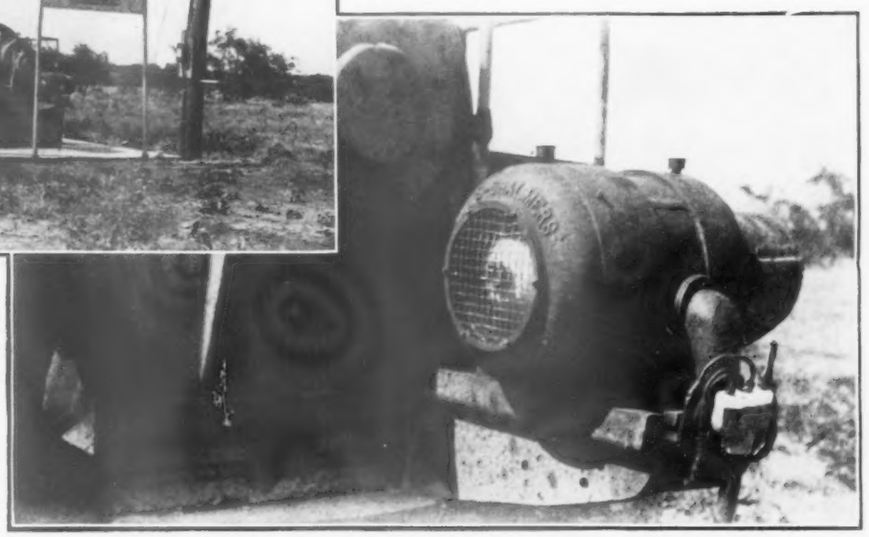
The adjustable feature has a range of adjustment from 1/32-inch to 5/32-inch and the variety of bushings available enables the user to select one well within the range of this adjustment.

The large end of the Vickers wrist pin is made to fit all standard pitman heads.

American Brass Company

WELDING RODS

American Brass Company is featuring welding with Tobin bronze and other Anaconda welding rods. This exhibit includes a complete display of Everdure metal, a copper-rich alloy described as possessing steel strength and high resistance to corrosion. Samples and parts used by the oil industry are on display as well as a general line of Anaconda admiralty and Ambrac condenser tubes.



3 H.P. Type "ARZ" Motor driving an Oil Well Pumping Jack near Baird, Texas.

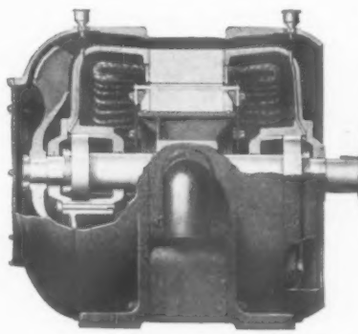
Rain and Dirt Cannot harm this motor

Allis-Chalmers Totally Enclosed Fan-Cooled Motors may be installed almost anywhere without any extra protection. Rain, dust, sand, gases — none of them can harm this motor. They cannot get into the interior of the motor or the bearings. A glance at the sectional view below will show how this protection is obtained.

The windings are enclosed by solid cast iron bearing housings that are attached to the stator end heads with a machined fit, and carry the grease packed bearings. This is a simple and sturdy construction, with no rubbing or revolving seals, making the windings readily accessible and giving extra strength to the motor.

Totally Enclosed Fan-Cooled Motors are intended for severe service where the installation of open type motors is not practical as in dusty or gaseous locations or where there is danger of oil soaked windings.

Standard sizes from 2 to 40 H. P.



ALLIS-CHALMERS

Totally Enclosed Fan-cooled MOTORS

Jensen Brothers Manufacturing Company

PUMPING JACK

The Jensen straight lift electric pump jack on display is a portable machine and completely housed and weather proof. A safety switch is part of the equipment to protect the motor. It is equipped with an automatic release on overload and under voltage with magnetic push button station for starting.

Jensen Jack

Gears of the Jensen jacks consist of a worm drive to a set of spur gears which drive the crank. This worm gear brings the speed of the motor down to approximately 180 r. p. m. and from this speed the spur gears operate.

The gear reduction is equipped throughout with Timken and Hyatt roller bearings. The bearing seats are bored in solid metal and the cases pressed into position.

The gear reductions run in baths of oil and is enclosed from the weather and dirt.

The jacks are built in four sizes and are designed for wells to 5000 feet deep.

Haynes Stellite Company

The Haynes Stellite Company, Kokomo, Indiana, is featuring this year samples of three products now being sold in the oil industry: Haynes Stellite, Haystellite and Hascrome.

HAYNES STELLITE

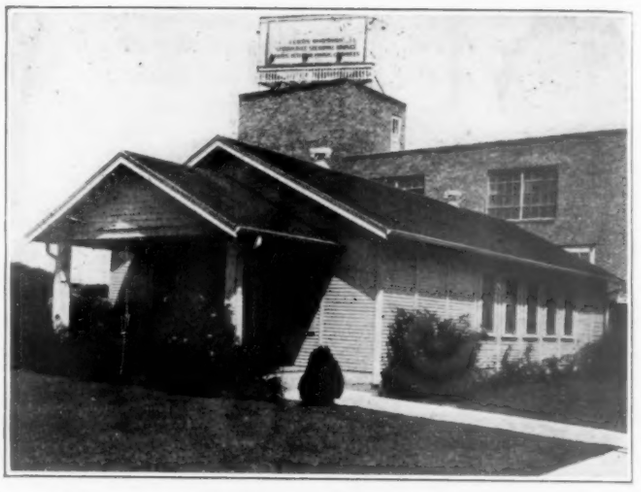
Haynes Stellite is described as an alloy of chromium, cobalt and tungsten which has had general use since 1924 for hard facing oil well drilling tools, as having the property of red hardness due to the composition of the alloy and the structure it assumes upon solidifying. It contains iron only as an impurity and in amounts represented by the slight iron content of the raw materials.

HAYSTELLITE

Haystellite is the company's diamond substitute, a material of cast tungsten carbide used for hard setting drilling tools. It is described as having the property of being sufficiently hard to dig the various formations and at the same time tough and strong to the extent that it withstands the stresses and strains of drilling operations without crumbling or spalling. After being set on the tool it is hard faced with stellite.

HASCROME

Hascrome is a patented chromium-manganese-iron rod designed for tacking Haystellite to the cutting edges of drilling tools. This rod is designed to form a good bond with the steel base metal and Haystellite. Its toughness makes it produce a cushioning for Haystellite and the coating of Haynes Stellite.



Southern Mill and Manufacturing Company

STURDYBILT HOUSES

The Southern Mill and Manufacturing Company of Tulsa is displaying a Sturdybilt sectional house for oil field use.

Sturdybilt sectional houses are built practical for oil company requirements.

They are easily erected and can be readily dismantled and re-erected on a new location if that becomes desirable. More than 95 per cent of the material can be salvaged in this event.

Sturdybilt sectional houses are also used for field offices or small tool and warehouses, as well as residences. Garages, bunkhouses, boarding houses and dining halls are also constructed from their units.

Simplex Jacks

Templeton, Kenley & Company

SIMPLEX JACKS

Templeton, Kenley & Company, Chicago, has on display a complete assortment of Simplex lifting jacks for oil country service, ranging from the small one-ton jack for light automobile service to the massive 25-ton Simplex jack for heavy duty work.

The No. 310 Simplex, which is the jack for trucks for field service, is designed to operate at any angle as well as vertically and is supplied with an auxiliary steel chain and steel claw, making it possible to handle loads under conditions difficult with the small jack.

Included in the display are several representative types of the new line of Simplex screw jacks, embodying important improvements in construction. They are used for general field service.

The Simplex pipe pushing jack and the Simplex timber jack are also on display this year.

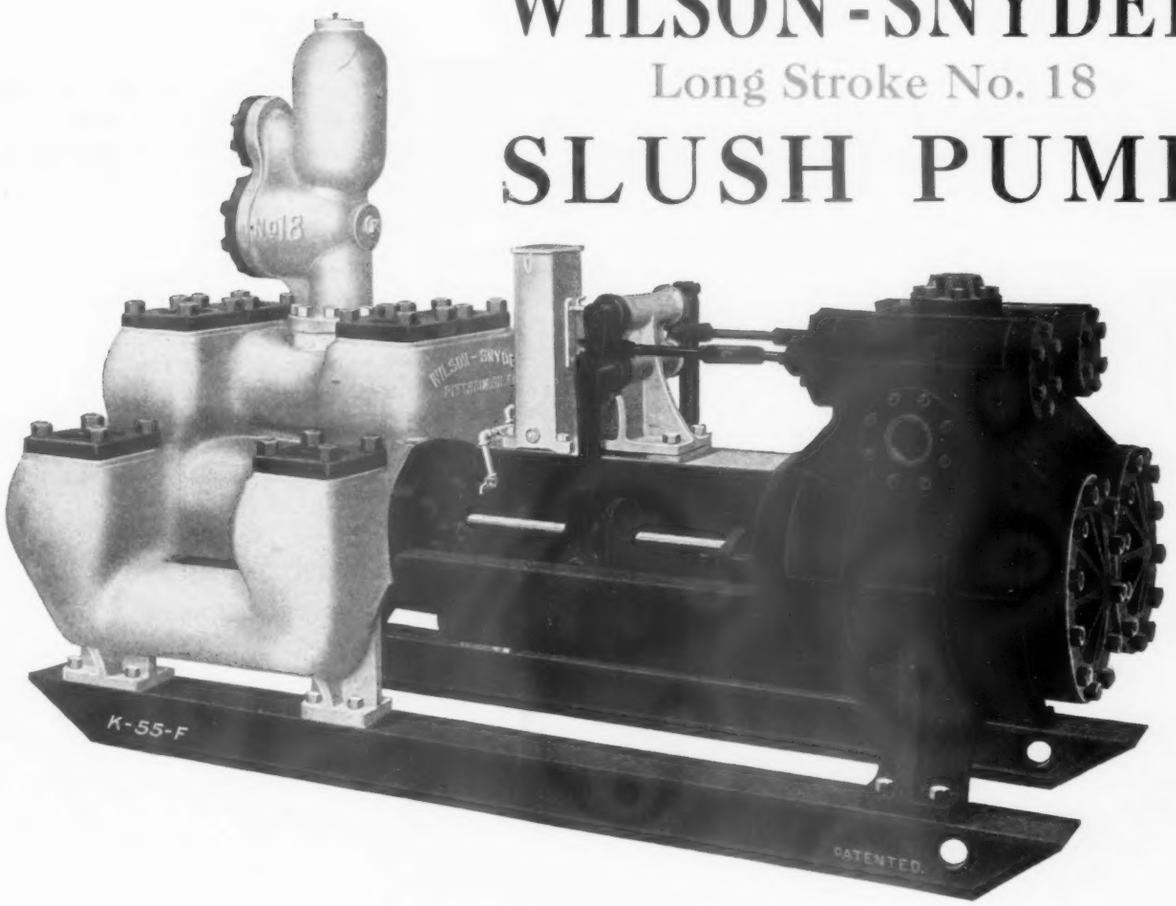
20% to 30% more Capacity....

.... without increasing valve and piston wear

WILSON-SNYDER

Long Stroke No. 18

SLUSH PUMP



This means that you can make more hole in less time with less repair parts. This is brought about by reducing the number of reversals of valve and the decrease in strokes of the piston.

The direct flow eliminates unnecessary wear and wasted energy.

The balanced steam piston valves allow uniform operating ease under all steam pressures. The rugged construction of this pump throughout greatly lengthens its life and materially aids in making more hole with less cost.

All parts are readily accessible and it is lubricated automatically, assuring a continuous supply of oil at all times.

IN ADDITION THIS PUMP IS BACKED BY FIFTY YEARS EXPERIENCE IN BUILDING HEAVY DUTY PUMPS.

WILSON SUPPLY COMPANY

1412 Maury St.
Houston Texas

OIL AND GAS WELL SUPPLIES

BRANCHES
Beaumont, Luling, Texas

American Foman Company

FIRE FIGHTING EQUIPMENT

The American Foman Company, Inc., Philadelphia, is displaying a full line-up of the fire extinguishing equipment and products manufactured by this company.

A specially designed unit furnished the U. S. Navy for the protection of its storage plant at Cavite, P. I., is illustrated here. This unit carries a live load of 13,000 pounds, consisting of 10,000 pounds of fomon generator chemicals, three fomon generators, 800 feet of hose and all tools and incidental equipment necessary.

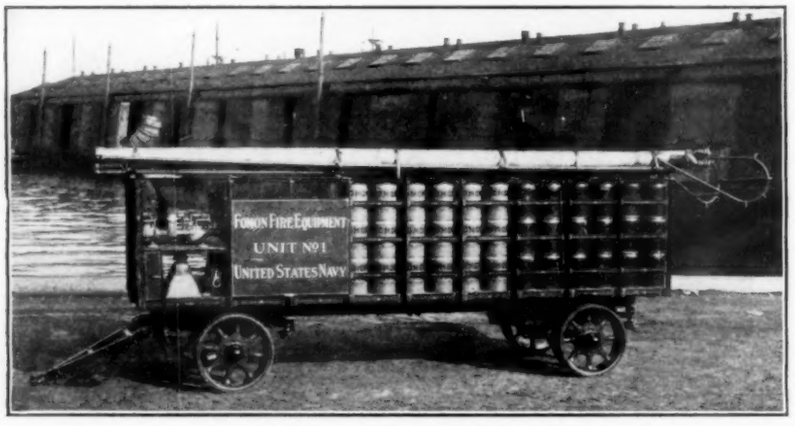
The design is such that everything is in readiness for bringing the foam extinguishing system into immediate use. The riser is removed from the top and the hose is taken out of the rear over a roller, after which the generators are removed for insertion in the hose lines at convenient places. The rear view shows the manner in which the screens affecting the division of the body are removed so that the chemicals may be lifted conveniently from the body. Construction is entirely of steel. The suspension is low so that travel over rough roads or open country is possible. With the unit it is only necessary to have a supply of water in order to have a complete foam extinguishing system.

In combatting tank fires, the generators may be located outside the dyke and the chemicals fed a sufficient distance from the fire to assure the safety of the operators. Anyone of the generators may be used with a single hose line and nozzle to combat incidental fires in the vicinity.

A portable tower, carried on a trailer foam generator system is also being exhibited. It is equipped with the fomon special tip which applies the foam to the oil surface in a compact mass at a definite angle with the surface, and the angle of application is based upon the principle of recochet. Formerly, when foam fell through any considerable height, upon the surface of burning oil in great quantities, a large aera was exposed to the heat. The splashing and submerging of these masses caused the foam to be covered with oil and thus less efficient. Under the new system the foam spreads over the burning mass with greater rapidity.

The new Model 20 fomon generator is also being exhibited this year as is the assembly of storage bins for holding fomon chemicals.

The system of which the bins are a part was designed for the protection of 14 storage tanks of varying size. The arrangement is such that either two or four generators may be used as desired. Each bin holds 4,000 pounds of chemicals. The fomon "A" chemical is stored in one bin and the fomon "B" chemical is stored in the other. In operating, it is only necessary to open the discharge lines to the particular tank, open the chemical valves, and turn on the water. The control is then practically automatic and one man can take care of the entire operation.



Special Fomon Unit for U. S. Navy

Cooper-Bessmer Corporation

ENGINES

Cooper-Bessemer Corporation of Mount Vernon, Ohio, and Grove City, Pennsylvania, is featuring in its exhibit three important types of gas and oil field engines.

Type OF Cooper-Bessemer engine for drilling and pumping has been redesigned to the point of being radically different from the type now in use.

The company's Type 10, the two cycle gas compressor unit, has undergone a number of changes, and the unit on display has several features new to engines heretofore built for this service.

Auxiliary power units are of nearly equal importance to the main engines in a gas compressing or oil pumping station. The company's Type EP-3 was developed to meet this demand for a unit of this type. This is the first time this unit will have been displayed and offers something to oil and gas men.

The Bristol Company

CONTROLLERS

The Bristol Company has in operation certain types of automatic control in order to show the method of operation. The exhibit envolves the use of physical principles. Most of the applications being shown where temperatures, pressures, liquid levels, differentials and mechanical movements are to be controlled within a very close degree.

The exhibit also includes types of valves employed on the various applications and the direct acting type known as the open and shut style which is commonly used where the temperature lag in the controlled apparatus is slight or the apparatus itself has a high storing capacity. This type of valve employs a small motor geared down to lift the valve stem. Limit switches stop the motor at the open or close position and rest the device so that the next impulse of the controller element will move the valve to the other extreme.

On applications where the throttling control is desired, due to the lag being greater, the control is accomplished by making a small change in the valve setting in which every direction is called for by the controller and making further small correction until the controller again indicates that the control temperature has been reached. Such valves are designed to tend to eliminate hunting to maintain the proper valve openings at all times.

In addition to control apparatus, the exhibit has representative instruments for recording pressure, temperature, liquid levels, motion, time and electrical operations, showing new developments made in the field.

EQUIPMENT
back of good service at *Wyatt's*

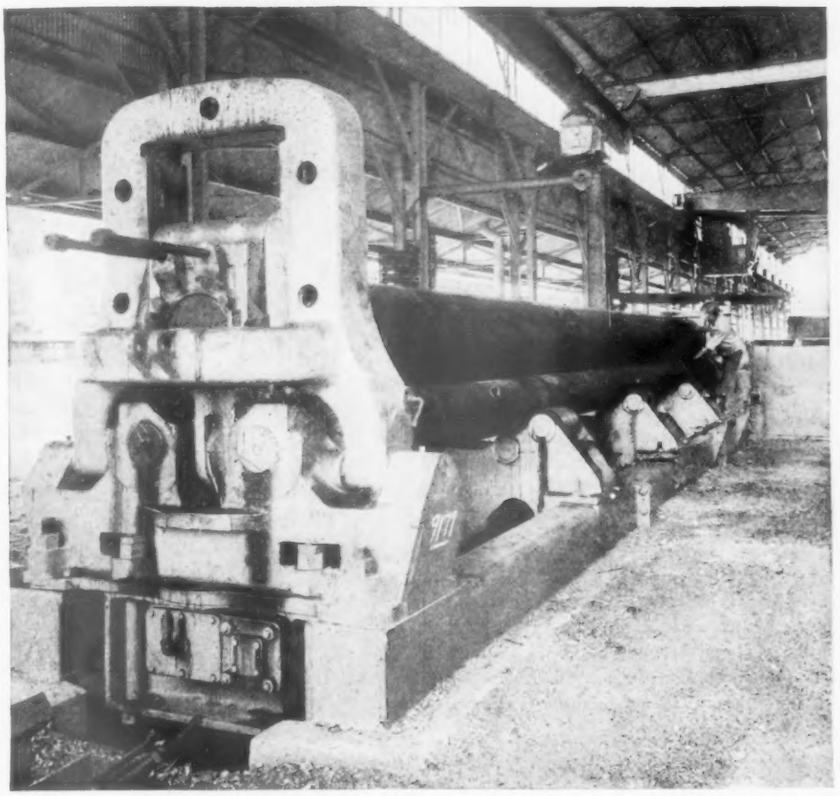


PLATE BENDING ROLLS

PLATE BENDING ROLLS thirty-six feet long attracted much interest during the recent visit of Houston purchasing agents to the new plant of Wyatt's.

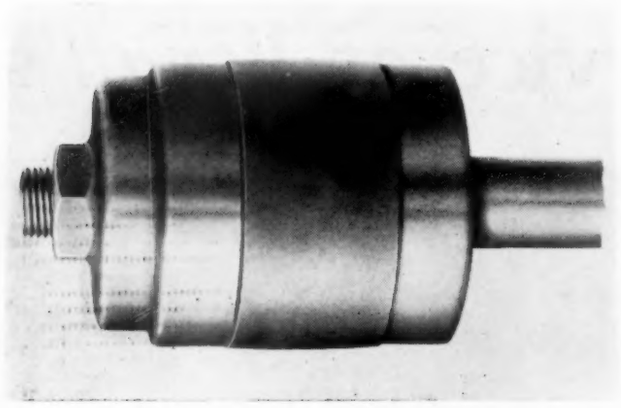
This machine has a capacity for rolling or bending three-fourths inch plate thirty-six feet long to a radius of thirty inches or one and one-half inch plate seven feet long to the same radius. It is particularly attractive to the Refining and Natural Gasoline Industries because of the necessity for heavier vessels to meet the demand for higher pressures and temperatures and to resist corrosion.

WYATT METAL & BOILER WORKS
DALLAS *Capital $1,000,000* HOUSTON

Wyatt's **WYATT**
METAL & BOILER WORKS

National Tool & Metals, Inc.

The National Tool & Metal, Inc., is exhibiting its line of hard facing materials, casing protectors and slush pump pistons.



Self Expanding Slush Piston

DRILLITE

Drillite is a molecular metallic diamond-sub paste for use against abrasive problems. It is applied by either the carbon arc or the acetylene torch. In the original form it is powder. It is mixed six parts of Drillite to one part of water and applied to the cutting edge of the tool with a paddle. Application of this product is being demonstrated at the company's booth.

ANGLITE

Anglite is the trade name of a super diamond-sub insert metal manufactured for acetylene application only. It is made in six types: round, half round, flat, square, octagon and tube (crushed). Any of these types are adaptable for facing rotary drilling tools.

CASING PROTECTORS

These protectors are constructed with a steel core, set with steel dies and mounted with a rubber sleeve. The steel core is fastened with steel pins that hold the core against the pipe. The rubber sleeve is to keep the drill pipe from wearing against the casing. A special barrel type rubber is used, being rounded so as to reduce friction to a minimum.

Drillite

Casing Protector

SELF-EXPANDING SLUSH PISTONS

The Nelson self-expanding slush piston has a high grade vanadium steel spring constantly exerting pressure against four tapered slips which in turn expand the rubber of piston to hold it against the liner of the pump. They are made for fitting all sizes of pumps.

Relay Motors Corporation

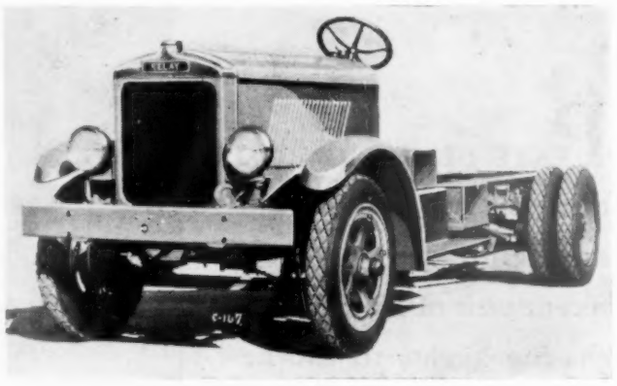
OIL FIELD SPECIAL

The Relay Motors Corporation is showing the Model 60 oil field special six-cylinder one-ton truck, which offers numerous new features.

Model 60 has the relay suspension drive which acts as a giant horizontal spring protecting the chassis and engine from jars and rocks.

The oil field special on exhibit is 175-inch wheelbase equipped with a Mead-Morrison winch Model 115. It has special 38x7 front and rear oil field special tires as standard equipment.

The cylinders are four-inch bore, 5⅛-inch stroke, 386.4 cubic inch piston displacement. There is a detacable head type engine and the cylinders are cast in block. The engine is suspended from three points to prevent crank case strains. Horsepower (S. A. E. rating) is 38.4.



Relay Special Oil Field Truck

The crank has two separate castings, upper half supporting bearings, shafts, gears and cylinder block. The lower half forms an oil reservoir only, easily removable without disturbing bearings, gears or other parts.

Model 60 has the force feed oiling system. Connecting rod bearings are fed through a drilled passage in the crankshaft from the main bearings, and oil is also delivered to the timing gears compartment.

The clutch is the multiple dics type, enclosed in the transmission housing. There are five speeds forward and two speeds reverse, selective sliding gear type. The transmission is mounted in the unit with the clutch. Gear ratio is 7.88 to one.

Two complete sets of brakes operate independently, a service brake, hydraulic type, internal expanding operates all four wheel. The hand brake contracts on the propeller shaft.

The gasoline tank, located under the driver's seat, has a 27-gallon capacity.

TRANSIT

The original & only genuine Klein

TONGS

Agents

HOCK-REID SUPPLY CORPORATION
Tulsa, Okla., or any store.

REPUBLIC SUPPLY COMPANY
of California
Los Angeles, California

E. L. WILSON HARDWARE CO.
Beaumont, Texas.

PUMPS TRANSIT ENGINES

NATIONAL TRANSIT PUMP & MACHINE CO. Oil City, Pa.

DISTRICT OFFICES

NEW YORK CLEVELAND PHILADELPHIA HOUSTON TULSA PITTSBURGH LOS ANGELES

Agents

F. C. RICHMOND MACHINERY CO.
Salt Lake City, Utah

REEVES & SKINNER MACHINERY CO
St. Louis, Mo.

Walworth Company

VALVES

Walworth Company is featuring in its four booths a complete series of oil line valves. These valves are mounted on specially constructed stands with roller-bearing swivels, which permit the valves to be turned around for examination by visitors. Valves are sectioned to show the working parts and

trim materials. The exhibit also includes Walworth Sigma steel valves for high-pressure, high-temperature service in refinery operation and a line of bronze valves, especially adapted to oil service. Among the latter are valves trimmed with the new Sigmalloy metal recently developed by Walworth Company. This metal is a nickel copper alloy, highly resistant to corrosion and erosion.

The display includes the showing of chrome-nickel-iron pipe made at the Attalla plant of the Walworth Company. This is a cast pipe with threaded ends. Walworth Company has developed a welding practice and is showing at the exposition for the first time welded lengths of C. N. I. pipe. Other lengths will be displayed with ends beveled for field welding and with grooved ends for plain end couplings.

A test of the Walworth Master stillson, in which the gripping strength of the wrench is demonstrated, is a feature which attracts much attention.

Emsco Aircraft Corporation

EMSCO CHALLANGER

Emsco Aircraft Corporation, an affiliated company of the Emsco Derrick & Equipment Company, Los Angeles, is displaying the Emsco Challanger. Officials of the two companies made the trip to the exposition in this plane, thereby offering a practical demonstration.

The plane is an eight-place high-wing cabin monoplane with luxurious accommodations for six passengers and two pilots. It has a span of 57 feet, is 36 feet long, 12 feet high, and is powered with three Curtiss Challanger motors of 170 horsepower each. The plane has a top speed of 130 miles per hour and a cruising speed of 100 miles per hour. The exterior is finished in Emsco green and gold with a golden wing. The interior decorations carry out the same scheme.

The Challanger is the first plane built in the Emsco Aircraft Corporation's new $1,000,000 factory at Downey, California. This plane has been bought by Emsco Derrick & Equipment Company for use by officials in making field trips. This plane has traveled approximately 25,000 miles over the Northwest, Pacific Coast, Southwest and East in the past three months.

Happy Belting Company

IDLER FOR BEAM WELLS

The Happy Belting Company, Tulsa, is featuring this year the vertical idler for beam wells, a fixed idler especially put out for use with endless belts on beam pumping, swabbing or drilling wells. It is set in an adjustable steel frame about five feet from the face of the band wheel between the bandwheel and clutch pulley. Tension is varied by means of handwheel geared to rack on the idler frame. The idler pulley is ball bearing equipped and needs greasing only three or four times a year. An endless belt used with this idler allows for the making of shortened centers, thereby saving in belt and belt house.

BAND WHEEL POWER IDLER

The company is also featuring the Happy automatic band wheel power idler, which was designed especially for use with endless belts on band wheel powers, but which is also used on powers equipped with belts with clamps. This idler has a 10-foot travel on a 14-inch tract and is set parallel with the belt. It rolls on this track and belt is varied by the addition or removal of weights. The idler adjusts itself to the belt as the belt stretches or takes up, or as the load is changed. As is the idler for beam wells, this power idler is ball bearing and requires greasing only three or four times annually. Because of the 180 degree turn in belts between the idler and band wheel when endless belts are not used, it makes it almost necessary to stay below a 14-inch belt in width.

Type No. 22 and 23 idlers are used especially on short center and high speed work. These idlers are adjustable and ball bearing equipped, and are weighted. The weights are adjustable so that the belt tension can be varied.

Happy Belting Company Idler

"STURDYBILT" SECTIONAL HOUSES

Save Money for the Oil Industry with an Actual 100 Per Cent Salvage Value

"STURDYBILT" SECTIONAL HOUSES are a realization of the Oil Industry's need for substantial housing facilities at low cost of initial construction and high salvage value.

"STURDYBILT" SECTIONAL HOUSES, adaptable to the peculiar needs of the Oil Industry for oil field lease, pipe line station or refinery use, are designed to afford the utmost in housing accommodations as well as low initial cost, quick construction and 100 PER CENT SALVAGE VALUE.

No. 413. Five-room "Sturdybilt" residence

No. 304. A "Sturdybilt" field office

No. 502. Five-room "Sturdybilt" lease house

Right—No. 504. Six-room "Sturdybilt" residence

Left—No. 202. Two-room "Sturdybilt" lease office

No. 411. Four-room "Sturdybilt" lease house with screened porch

No. 801. "Sturdybilt" bunk house and dining hall

No. 51. "Sturdybilt" two-car garage

It is conservatively estimated that in the Mid-Continent field alone the Oil Industry has a "dead" investment of well over a Million Dollars in standard constructed houses which could have been reclaimed had "STURDYBILT" SECTIONAL HOUSES been used instead.

For Seven Years "STURDYBILT" SECTIONAL HOUSES have been the leader in section-built houses for Oil Industry usage . . . their comparative value will endure over all other specifications with their actual 100 PER CENT SALVAGE VALUE against the low or absolute lack of salvage value of other types of oil field housing construction.

Descriptive Booklet on Request

SOUTHERN MILL & MFG. CO.

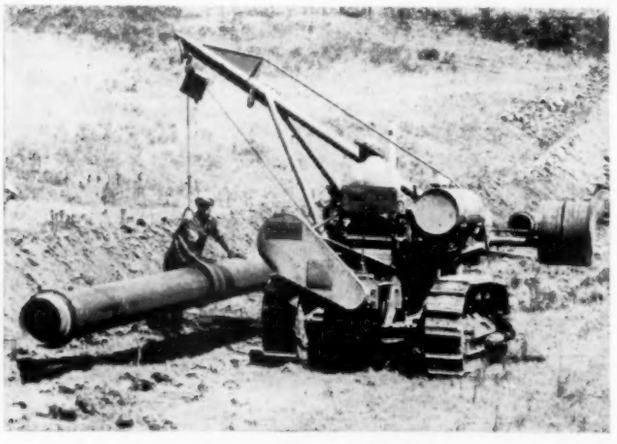
Manufacturers of "Sturdybilt" Sectional Houses

TULSA, OKLAHOMA

Allsteel Products Manufacturing Company

TRACTOR WINCH

The Allstell Products Manufacturing Company, Wichita, Kansas, is featuring several models of tractor winches as follows:



Allsteel Tractor Winch

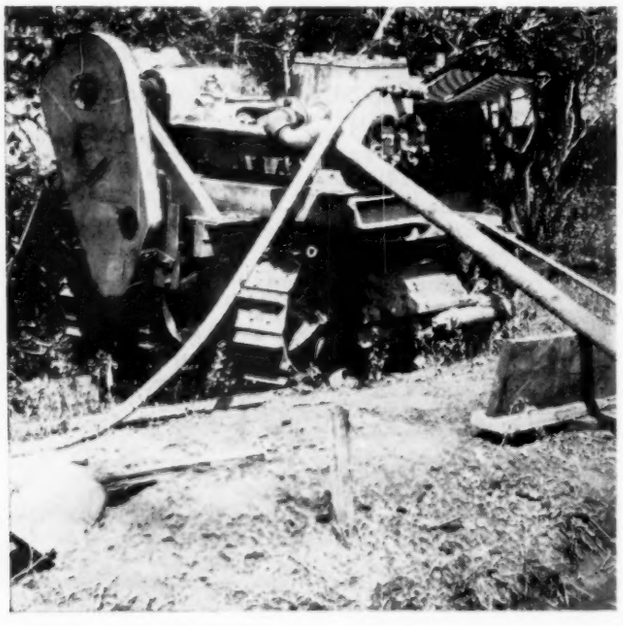
The Model 60 Allsteel winch has a drum capacity of 13,000 feet of five-eights-inch cable, has eight speeds forward and two reverse on the drum, giving a variation of line speed of 65 feet per minute in low-low gear to 1850 feet per minute in high-high gear.

The model 30 Allsteel winch is the standard winch for Model Thirty "Caterpillar" tractor, and has been in production 2½ years for use in rod and tubing jobs from wells up to 4500 feet.

The Model 30-R side winch and boom is completely electrically welded throughout.

Model 15 oilfield winch mounted on the Model Fifteen "Caterpillar" tractor has transmission chains running in a complete bath of oil, with ample brake capacity for the deepest wells. The unit is recommended for wells of 3000 feet and under.

Model 15 "Caterpillar" with the four by six Gardner-Denver pump mounted is designed for core-drilling, to dig slush pits, fill them in and to move equipment from one location to another.



Caterpillar With Gardner-Denver Pump

Smith Separator Company

OIL & GAS SEPARATOR

A working model of a Smith oil and gas separator is being exhibited by this company, and also two small separators in actual operation in the Bureau of Mines exhibit.

The Ever Ready protector is operated in the booths to show its advantages in giving protection to tubing under field conditions that come up.

A demonstration is being given of the modern and economical method of laying pipe lines with victaulic leakproof couplings, and illustrations are shown with moving pictures of installations in the fields.

Engineers of the company are present to demonstrate the complete line of Fisher automatic regulating specialties.

Reed air filters are exhibited for the purpose of displaying their advantages in the operation of engines and compressors.

There is also on display the Waters water gauge cock.

DeVilbiss Paint Gun

DeVilbiss Company

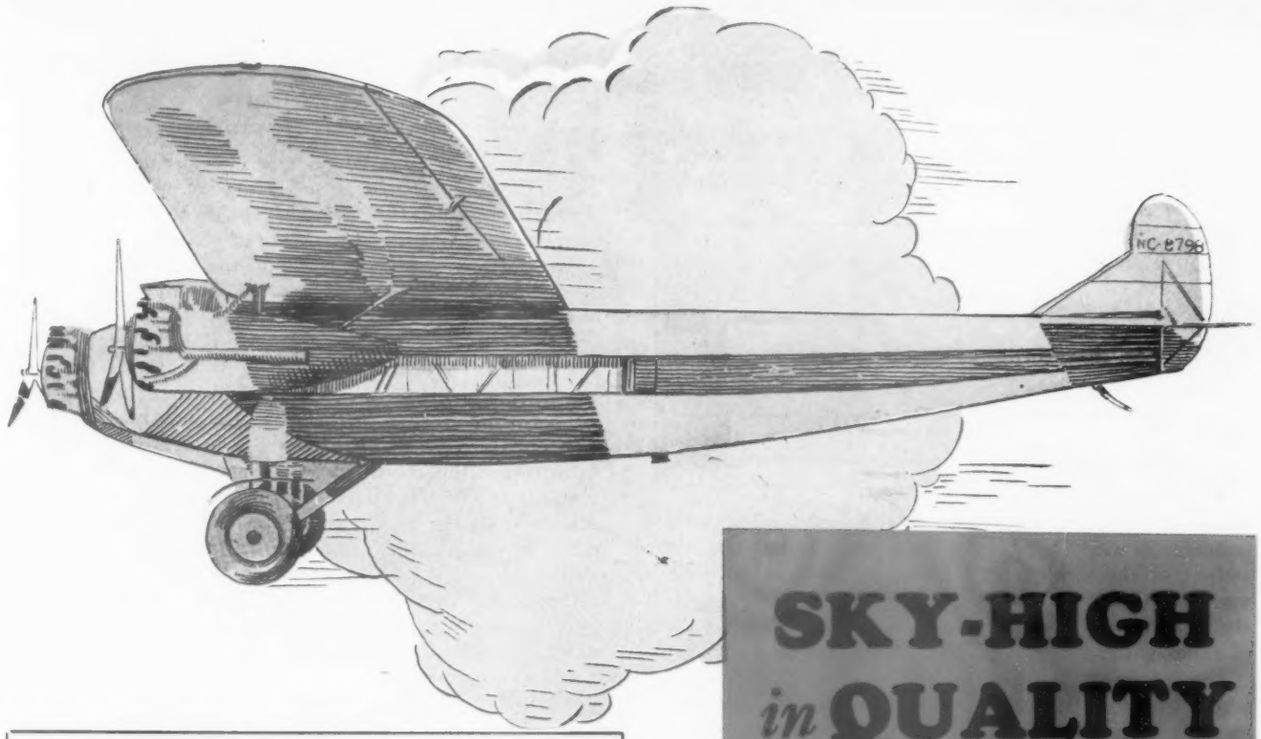
SPRAY PAINTING EQUIPMENT

The DeVilbiss Company, Toledo, is displaying a line of portable spray painting equipment, featuring the spray gun Type AV.

The gun makes a pattern when finish is sprayed onto a surface. This varies in shape and width according to the preference of the operator, the material used and the nature of the work. The pattern most often used is elliptical in shape. When applied with this gun the application is of uniform thickness from the center to the two ends of the ellipse.

The DeVilbiss gun, designed on the "ball-and-cone" principle, is made to eliminate the possibility of misalignment of the few parts used in the spray head. Spacing and alignment is automatically maintained between the fluid nozzle and the air nozzle, and air-tight seating given when the gun is assembled. The material flow is encircled by an evenly distributed air stream. Air issues from the side ports, to form the wide or "fan" spray, at a constant, uniform pressure.

An illustration is carried here of the Type AV DeVilbiss spray gun.



SKY-HIGH *in* QUALITY

THE most expensive equipment you can buy is the kind that will be repaired, remodeled or altered constantly—the kind that breaks down when service must go on—the kind that costs dollars every day. Alten products cost no more than you would expect to pay for good equipment. And they are sky-high in quality

For forty years we have been watching these products in actual service and constantly producing modern improved equipment to meet the demands of the oil fields. Everywhere you will find them giving satisfaction, because every part is built to stand up under the longest, hardest service to which it can be placed.

Ask for them at your supply house.

ALTEN'S

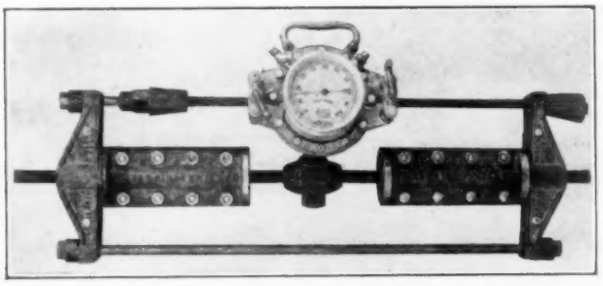
FOUNDRY & MACHINE WORKS

Established 1889 LANCASTER, OHIO

Martin-Loomis Corporation

WEIGHT INDICATOR

Martin-Loomis Corporation, Long Beach, California, is showing its automatic recording weight indicator with all of the new improvements and developments, including the



outside-in recorder for the weight indicator. The weight indicator is used on rotary drilling wells to determine the weight of the string at all times. Its purposes include a more even load to keep the hole straight and to protect the wear on the machinery as well as to provide a record of running time.

The company is featuring the new mud pump gauge which has recently gone on full production. This instrument is so constructed and the action dampened that it may be used on the mud pump without fear of contaminating the gauge itself or its wearing out owing to excessive pulsations. The bronze container immediately below the gauge contains a rubber pouch which is filled with a fluid of high glycerin content. This fluid can only get to the gauge by passing through 65 inches of very small copper tubing which is an intregal part of the instrument, and to further get immediate gauge action without time lag the bourdon tube of the special hydraulic gauge is loaded under 28 inches of vacuum, making a compact instrument cushioned and dampened to insure practically the same life as though the gauge had been used on ordinary work.

TEMPERATURE BOMB

This bomb is a small instrument 1½ inches in diameter, 12½ inches long, which is run on the sand line or may be dropped inside the drill pipe to ascertain the temperature at the bottom of the hole. The instrument contains eight pockets or receptacles protected by an equal number of cap screws or plugs. A set of low melting alloys are placed in the instrument, and the instument is either run on the sand line or may be dropped in the drill pipe or tubing and when brought to the surface the alloys melted determines the temperature at the bottom of the hole. The alloys supplied with the instrument are made in temperature steps of two degrees between each alloy or as high as 10 degrees between each step.

Charles N. Hough Manufacturing Company

PUMPING EQPIPMENT

Charles N. Hough Manufacturing Company is displaying a line of pumping equipment, including the Steelex, Bronze, Repelex and Combines balls and seats; working barrel valves, seamless steel working barrels and the liner type working barrels, including the Lewis plunger and liner and Huf-Duo pump; also the Hough extension lower valve and Excelex sucker rod socket.

The new Huf-Carlberg liner working barrel is being featured. The principal object of this unit is to provide a working barrel in which packing is used in conjunction with cups and so designed that the packing can be expanded while the working barrel is in operation, and without moving the valve out of the stroke where it has been working. The Huf-Carlberg liner working barrel is installed complete with sucker rods and seats on top of the old working barrel or a special seating nipple can be used, if desired.

The outer tube is in two pieces, which are connected together with part inter tube connection. The plunger valve works in the lower tube and upper tube is to provide clearance for the packing expanding tube. The plunger, fitted with plunger valve and four-cup lower valve is stationary. The outer tube with upper valve is the moving part of the unit.

The plunger valve is fitted with four composition cups on the lower end and packing rings or hydraulic on the upper end. The packing expanding nut screws on the upper end of the plunger valve body, and is attached to the packing expanding tube. The packing expanding tube has two flat surfaces and works through the part inter-tube connection which is made with square hole.

Federal Steam Specialties Company

WESTCO PUMP

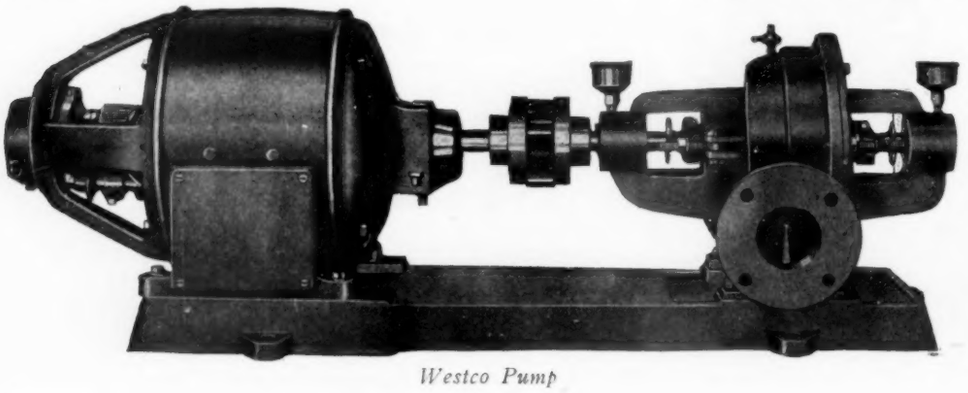
Federal Steam Specialties Company is featuring the Westco pump, which is illustrated here. It is designed so that the liquid enters the impellor at its periphery for equal distribution on both sides of it. These pumps are designed with two outboard radial ball bearings. They may be entirely dissembled without disturbance to the suction or discharge connections.

A line of "everlasting" valves, including valve for blow-off sand hog pumps, and oil and gasoline terminals, and a gate valve is exhibited. The gate valve is of the outside screw and yoke rising stem type.

A water recooling system in two types is on display. Both indoor and outdoor spratowers developed during the past few years are shown.

A line of steam, water, gasoline and oil specialties, including regulating valves, traps and pump governors are also included in this exhibit.

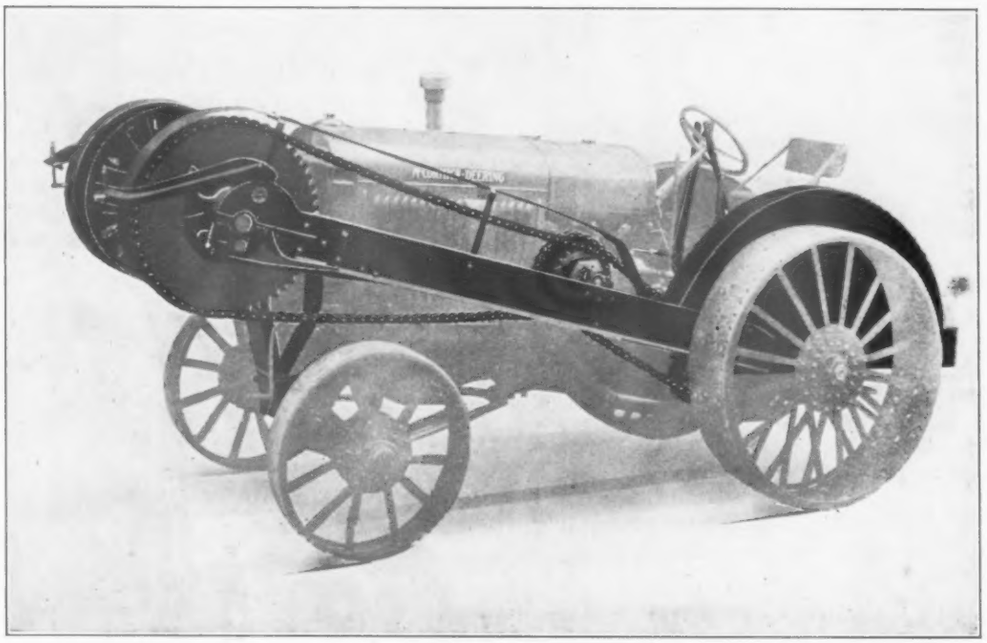
The Evinrude twin cylinder centrifugal pump, manufactured by the Evinrude division Outboard Motor Corporation, Milwaukee, Wisconsin, for distribution early in 1929, is also on display by the Federal Steam Specialties Company. It is powered by a six horsepower motor affording a pumping rate of 15,000 gallons per hour, and weighs only 104 pounds.



Westco Pump

Announcing
SHAFFER'S
Super BEAR CAT Hoist

BEAR CAT HOISTS MEET EVERY OIL FIELD REQUIREMENT



Mounted on the 15-30 McCormick-Deering Tractor

For Deep Wells

With the introduction of the Super Bear Cat Hoist, we can now serve every oil field requirement for Speed, Efficiency and Economy in operation with a Bear Cat Hoist for wells from the shallowest to the deepest.

Junior Bear Cat Hoist for wells up to 2500 ft. Senior Bear Cat Hoist for wells up to 3500 ft. Mounted on the 10-20 McCormick-Deering Tractor.

Super Bear Cat Hoist for wells from 3600 ft. and deeper. Mounted on the 15-30 McCormick-Deering Tractor.

Comparative maintenance costs year after year proves Bear Cat's Superiority.

SHAFFER PRODUCTS
"are precision made"

The SHAFFER SPECIALTY Co.
PATENTED OIL WELL EQUIPMENT

Factory and General Offices: 113-115 South Denver, Tulsa, Oklahoma

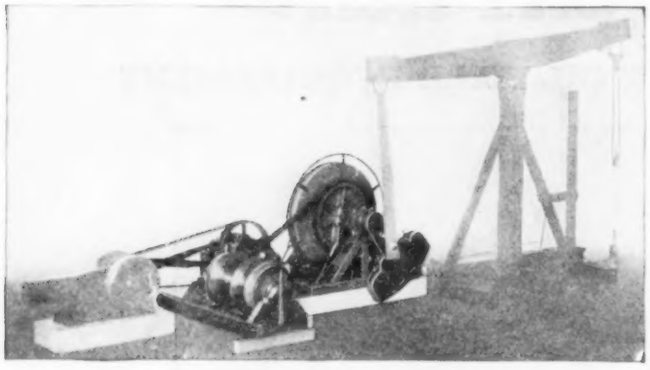
See us in our new modern plant after November 1st, corner North Atlanta and King Street

P. O. BOX 1434 TELEPHONE 7271

Oil Country Specialties Manufacturing Company

RIG FRONT

The Oil Country Specialties Manufacturing Company, Coffeyville, Kansas, is this year featuring the O. C. S. Universal rig front, an assembly of products which have been pioneered by this company.



O. C. S. Rig Front

These individual items consist of the chain driven sand reel, the countershaft clutch, chain driven reduction unit and the centrifugal counterbalance.

Two of the leading features about this assembly are the adoption of the Timken roller bearings and the diamond roller chain. Self-aligning Timken jackpost boxes are one of the principal features that has made possible this rig front.

Other O. C. S. equipment is displayed by photographs, particularly illustrating rigs in operatioin.

Young Engine Company

DRILLING ENGINE

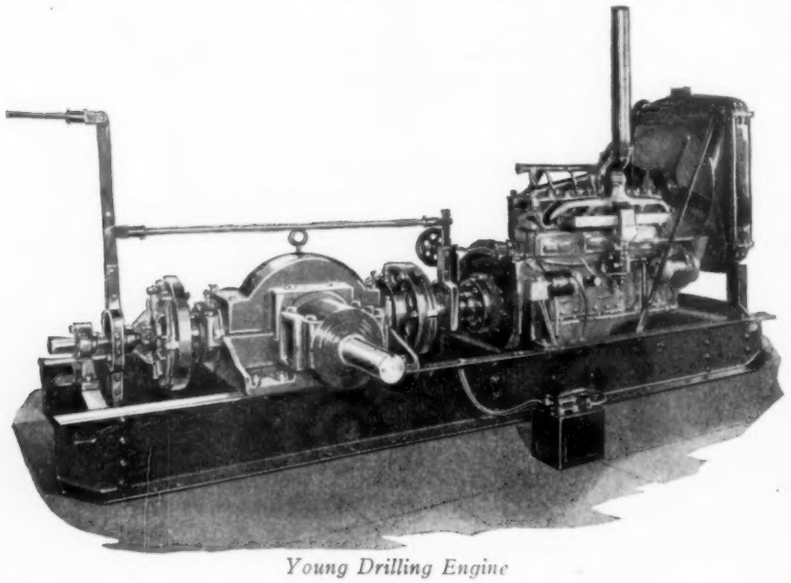
Young Engine Corporation, Canton, Ohio, is displaying the Model 95-S, a medium powered drilling engine, the size between the Big Boy and the Youngson engines.

The 95-S engine is powered by a six-cylinder motor, 4¾-inch, six-inch stroke, developing 110 horsepower at maximum speed. By using the six-cylinder engine a steady flow of power is given, as well as quick acceleration.

Timken tapered roller bearings with the cut alloy steel gears and pinions are enclosed in a heavy dust-proof and oil-proof transmission case where they run in a bath of oil.

As in former models of Young engines, the pulley shaft is at right angles to the length of the engine, and on the left-hand side, thus making the unit narrow and compact, requiring only a standard width engine house. The belt pulley is 22-inch to 24-inch in diameter, with clamp hub which makes it easily changed.

Furnished with the drilling engine as standard equipment are the following: cast iron radiator, electric starting motor with battery, service brake, and either natural gas mixing valve with sensitive regulator or gasoline carburetor, or at extra charge, a combination gas mixing valve and carburetor can be furnished.



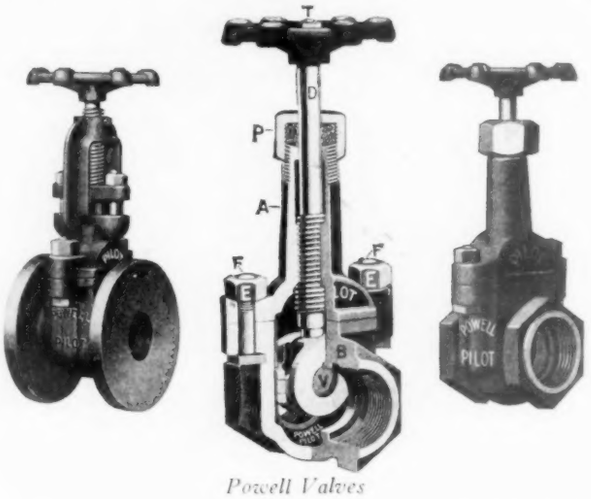
Young Drilling Engine

The William Powell Company

PILOT GATE VALVES

The William Powell Company's pilot gate valves being shown this year are obtainable in all iron rather than being furnished with bronze stems, packing nuts and discs.

The stem is furnished with machined full length acme threads, which, in the bonnet are engaged in the closing or critical wear point of the valve.



Powell Valves

Bronze discs are double wedge type, self-adjusting, and aligning with ball and socket back.

Two through bolts in lugs provided on either side of the body and bonnet are used for firmly holding these together. Lugs are so positioned to admit standard bolts of proper size. This construction affords ease in replacement in case of accidental burring of bolt threads.

A special milled gasket is machined on base of bonnet and top of body for making a tight union. Ample packing space is provided in the top of bonnet. These valves may be repacked under pressure with the valve full open. They are designed for standard working pressures in screw or flanged ends, with iron body and bronze trimmings, or in all iron.

A complete line of bronze, iron and steel, globe, angle, check, gate and safety valves especially designed and processed to be oil and gasoline tight, also oilers, lubricators, grease cups, water and oil gauges, and sundry engineering appliances adapted for the oil industry is being exhibited.

SPEED WITH CERTAINTY

Clean out your wells with a...

MILLER

SAND PUMP

Regular Sand Pump bottom illustrated in position in the pump.

SPEED in cleaning out is made possible when you use a Miller Combination Bailer and Sand Pump, because you can use a 25 or 30 foot barrel. As illustrated, the wire line has direct connection with Plunger, eliminating a rod, enabling use of a longer pump in the well.

The Plunger is made 18 inches long with eight water courses permitting the fluid to seal the valve on top of the plunger, thus creating a greater suction than in any other pump made.

The barrel of the Miller Sand Pump is of National Seamless Steel Tubing and all of the other parts are of the finest grade of steel which eliminates any leather washers.

Furnished with various type bottoms illustrated, for use as a sand pump or bailer. Made in 2½, 3, 3½, 4, 4¼, 5, 5½, 7 and 9 inch diameters and 20, 25, and 30 foot lengths.

Send for circulars and price list. The Miller Sand Pump is sold through the leading supply stores or direct from the factory.

Patented
March 1, 1921—No. 1370340
January 20, 1925—No. 1523604

Chisel Bottom

will save the expense of running tools and its chisel shape prevents sticking in tightly packed sands.

Bailer Bottom

will speed up production in cavy holes by time saved in picking up cuttings.

Star Bottom

used for cutting the sand loose and preferred by some to the Chisel Bottom.

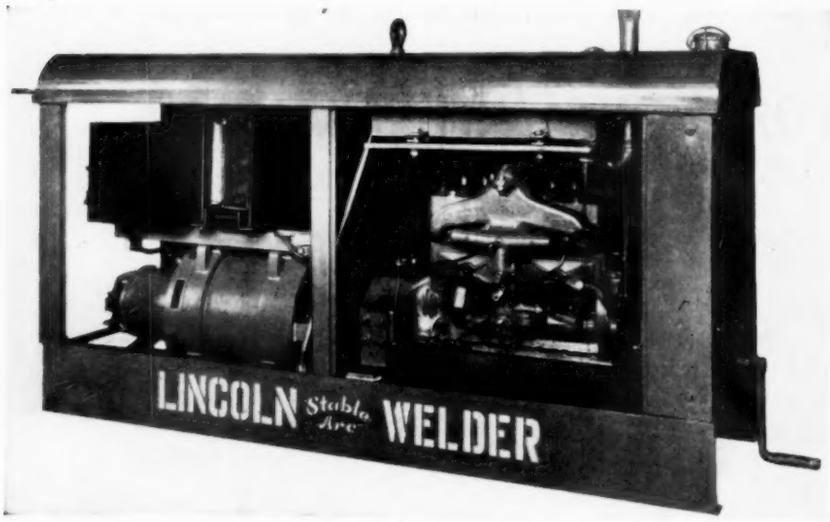
WRITE FOR CIRCULARS

on another Miller product, the Chancellor Separator—designed to separate gas, sand and water from the oil at the bottom of the well.

MILLER

Combination Bailer & Pump Co.

SAPULPA, OKLAHOMA



Lincoln Welder Unit

Lincoln Electric Company

GAS ENGINE DRIVEN WELDERS

Lincoln Electric Company, Cleveland, Ohio, has on display a new model of gas engine driven welders for use where electric power is not available. These machines will be of 200 and 300 ampere equipment and of types which have been so largely used in the electric welding of oil lines.

The latest improvements which are featured in the new models of Lincoln gas engine driven welders are included in the exhibit. An automatic idling device is incorporated which automatically reduces the speed of the engine when welding operations cease and automatically accelerates the engine to the proper speed, as soon as welding is started. It is estimated that the automatic idling device will reduce fuel consumption materially as well as considerably reducing wear in the welder which will permit longer life of the equipment.

Another feature of these new models of welders is the complete protection afforded the machinery by the welded steel canopy which totally encloses the outfit.

Unified control, a feature of all new improved "Stable-Arc" Welders, is also incorporated in these models. Operating controls are enclosed in a ventilated steel cabinet.

"STABLE-ARC" WELDERS

New improved Lincoln "Stable-Arc" Welders are exhibited. Many new features of design and construction increasing the "stable-arc" features are introduced in the new improved type welders which are finding marked favor among the users of electric arc welding equipment.

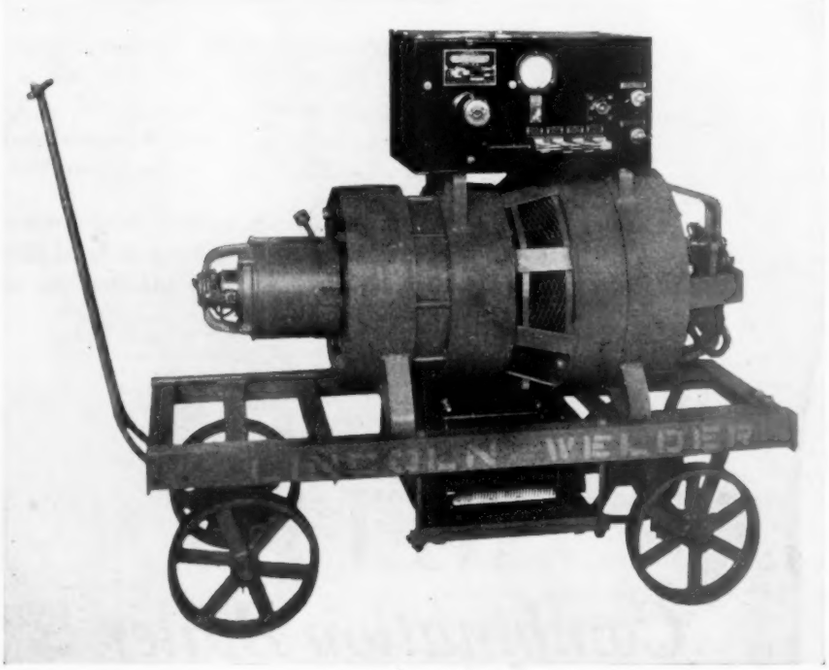
The unification of the controls of both motor and generator is one of the outstanding features. The working mechanism of all controls are contained in a ventilated enclosed steel cabinet with hand regulators and switches mounted on a panel which forms a side of the cabinet. The control panel contains rheostat regulator, diverter switch, safety starter switch, volt ammeter and wing nut terminals for cables. This unified control greatly increases the simplicity of the operation of the welder. The control cabinet is mounted directly over the motor generator for easy access by the welding operator. This also permits the removal of the motor generator armature, without disturbing any other parts.

The use of a combined voltmeter and ammeter, known as a volt-ammeter, makes possible the reading of amount of voltage and amperage on one dial and eliminates the use of the separate delicate ammeter which would be given excess wear on a Lincoln welder, due to the large output keeping the ammeter jammed against the high limit pin on the dial. In this way, the volt-ammeter insures longer instrument life. The face of the volt-ammeter is mounted flush with the control panel assuring the utmost protection possible.

Terminals for the lead cables are equipped with winged nuts, a feature which makes quick and easy connections possible, especially when it is desired to reverse the polarity of welding current. The use of these winged nut terminals also eliminates the necessity of a switch for reversing polarity.

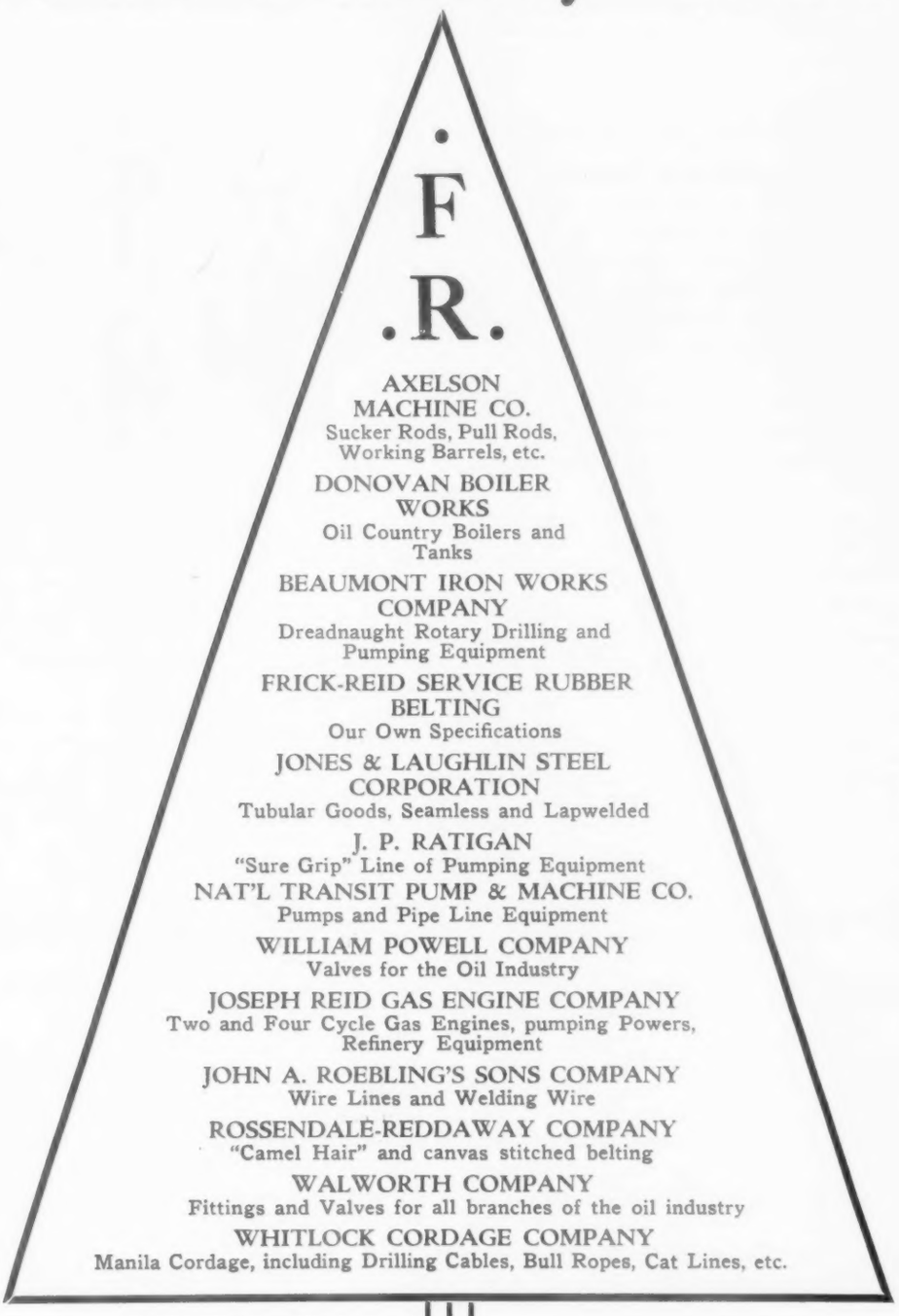
The Lincoln safety push button switch is incorporated in the control panel for starting and stopping of the welder. This new type switch, introduced to the market only a short time ago, offers an added safety feature to the control mechanism of the new model welder. With this type of safety switch it is an impossibility to accidentally start the welder.

Enclosed wiring of all operating controls as well as a metal backed rheostat are the result of the use of a unified control cabinet. The mounting of this cabinet over the motor generator permits the use of a shorter chassis frame



Lincoln Welder Unit

. . Our Family Tree . .


F
R
AXELSON MACHINE CO.
Sucker Rods, Pull Rods, Working Barrels, etc.
DONOVAN BOILER WORKS
Oil Country Boilers and Tanks
BEAUMONT IRON WORKS COMPANY
Dreadnaught Rotary Drilling and Pumping Equipment
FRICK-REID SERVICE RUBBER BELTING
Our Own Specifications
JONES & LAUGHLIN STEEL CORPORATION
Tubular Goods, Seamless and Lapwelded
J. P. RATIGAN
"Sure Grip" Line of Pumping Equipment
NAT'L TRANSIT PUMP & MACHINE CO.
Pumps and Pipe Line Equipment
WILLIAM POWELL COMPANY
Valves for the Oil Industry
JOSEPH REID GAS ENGINE COMPANY
Two and Four Cycle Gas Engines, pumping Powers, Refinery Equipment
JOHN A. ROEBLING'S SONS COMPANY
Wire Lines and Welding Wire
ROSSENDALE-REDDAWAY COMPANY
"Camel Hair" and canvas stitched belting
WALWORTH COMPANY
Fittings and Valves for all branches of the oil industry
WHITLOCK CORDAGE COMPANY
Manila Cordage, including Drilling Cables, Bull Ropes, Cat Lines, etc.

FRICK REID

SUPPLY CORP.

Pittsburgh . . . . . Tulsa

COVERS THE FIELD WITH WELL MANAGED STORES FROM THE ROCKY MOUNTAINS TO THE ATLANTIC COAST

or base than used in previous models. The shorter base offers the advantage of less floor space occupied by the welder as well as a smaller turning radius of the portable models.

Axelson Aircraft Engine Company

SUCKER RODS AND PUMP BARRELS

The Axelson Aircraft Engine Company's booth represents a miniature service store, and measures 10 by 20 feet. The roof is of red sanded tar-paper, while the supporting members consist of eight Axelson pump barrels. The railing around the booth is made up of sucker rods, while other fitting displays are carried out with the same idea in mind.

There is a relining bench, on which pumps are being relined by Axelson representatives during the day. A complete line of pumps, sucker rods, fittings and accessories are exhibited.

Waukesha Motor Company

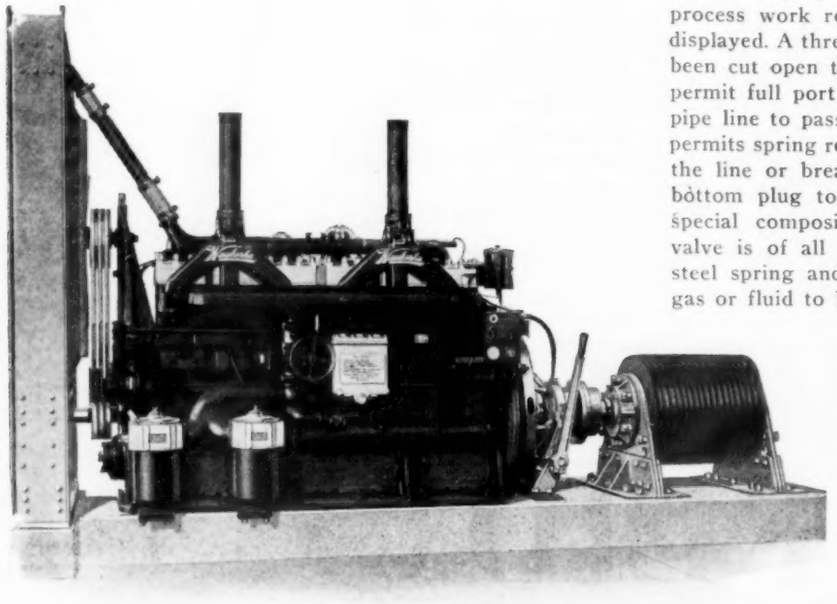
DRILLING ENGINES

The Waukesha Motor Company, Waukesha, Wisconsin, is featuring a group of engines typical of their standard sizes from 20 to 350 horsepower.

The newest addition to this group is a large six-cylinder engine which has been developed for rotary drilling, and which is being demonstrated in full operation.

Another new development, a 70 horsepower to 120 horsepower portable cable tool drilling unit, will be shown. It is complete with reverse gear, radiator and structural base, and requires 50 per cent less space with a 35 per cent decrease in weight over former designs. Other stationary and portable types of standard Waukesha models will be on display.

The accompanying illustration shows the new Waukesha 275 horsepower "great six" engine.

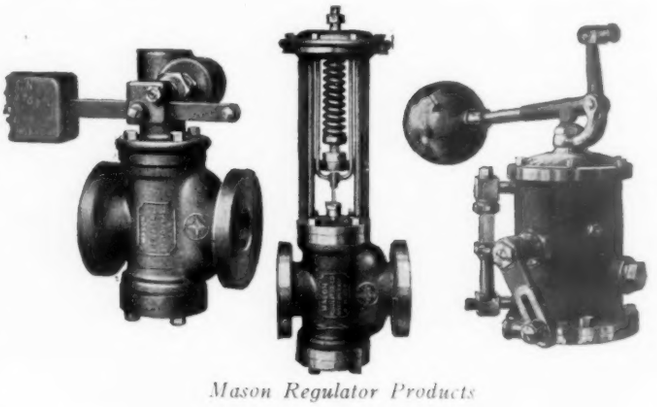


Waukesha Engine

Mason Regulator Company

PRESSURE CONTROL DEVICES

Mason Regulator Company, Boston, is featuring a line of pressure and liquid level control devices for use in field and refinery.



Mason Regulator Products

An eight-inch No. 294 liquid level controller, equipped for remote control by means of plant water, oil or air pressure of a pressure reducing valve in the feed line, or a steam pump pressure regulator in the steam line to the pump delivering the fluid to the container is shown. It is designed for use where it is inadvisable to place the float inside the liquid container.

The company has a one-inch No. 55 steam pump pressure regulator and pressure reducing valve for use with the 294 level controller. It is used for gradually opening, starting and stopping the pump without slamming or jarring. It is further used as a reducing valve where initial pressure is liable to fall below the required reduced pressure, being normally open.

Another item featured for the interest of producers is the No. 266 casing head gas regulator, which is designed to maintain a constant back pressure or vacuum on the wet gas line at the well. Its purpose is also to hold a given vacuum or back pressure on the casing head to permit the excess to pass into the gathering lines.

The company's No. 368, new bellows operated valve, for process work requiring accuracy and sensitivity, is being displayed. A three-quarter-inch valve is being shown and has been cut open to show the construction. The design is to permit full port opening, allowing the full capacity of the pipe line to pass through the valve. A removable top plug permits spring replacement without removing the valve from the line or breaking the pressure joint, and a removable bottom plug to permit dismantling and replacing of the special composition valve seat without difficulty. This valve is of all bronze construction except the rust-proof steel spring and cap screws which are shielded from the gas or fluid to be regulated.

A governor for controlling speed of both single acting and duplex steam pumps is also on display in this exhibit. Its motion is derived from some reciprocating part of the pump, and the governor controls a balanced valve in the steam line, regulating the amount of steam to the requirements of the pump and automatically maintaining a uniform speed regardless of variation of steam or load.

No. 328 is a back pressure regulator which is operated by air or gas pressure controlled through an auxiliary valve.

BITURINE COATINGS

Biturine Enamel *Biturine Solution No. 5*
Biturine Enamel Primer *Biturine 70-30*
Biturine Coupling Mixture

This group of protective coatings represents the fruits of more than 20 years of careful research and practical experience. Biturine Enamel and Primer are particularly adapted to the Hill, Hubbell & Company process of mechanically applying protective coating to the pipe at the mill.

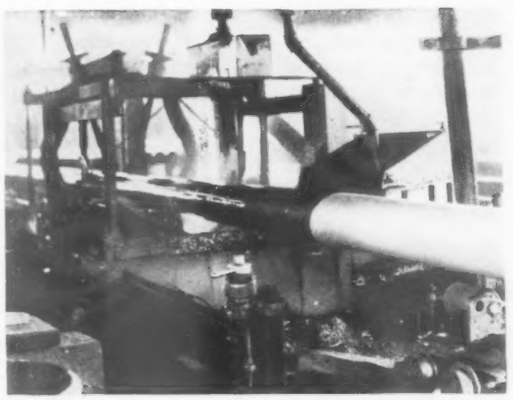
Mechanically coated and wrapped pipe. The newest development in pipe line protection

Now you can buy line pipe mechanically coated and wrapped *at the mill*. No longer need the laying of new lines or the renewal of old ones be subject to the hazards and delays caused by the old method of applying the protective coating in the field. Your pipe is delivered to you ready to lay, fully protected by the Hill, Hubbell & Company process of coating the pipe and wrapping it at the mill.

It is generally accepted by authorities that *proper application* of pipe line coating is the most important feature in the success of any form of protection. Field applications under the most ideal conditions have never been productive of a 100% satisfactory job in all cases, owing to the unfavorable conditions under which the work had to be carried on—inclement weather—unskilled labor—varying temperatures—the difficulty of properly cleaning the pipe and applying the coating of the protective material so as to cover the surface thoroughly.

The Hill, Hubbell & Company process of mechanical application at the mill eliminates all these difficulties, and presents the following outstanding advantages:

1. The pipe is thoroughly cleaned of all rust and mill scale.
2. It is not only thoroughly dry but warm when the primer is applied.
3. The required thickness of the protective coating of Bitumen is applied *before* the felt is applied.



The Coating and Wrapping of the Pipe is a Continuous Mechanical Process

4. This thick coating is applied in two coats, insuring freedom from pin holes and bubbles.
5. The coating of felt is applied under tension and is exactly spaced and, therefore, perfect.
6. The whole process is mechanical, involving no human element, and no waste.
7. The entire operation goes on under roof and can proceed night and day regardless of weather.
8. Exact temperature control of the Bitumen is possible. This is important and cannot be had in field operations.

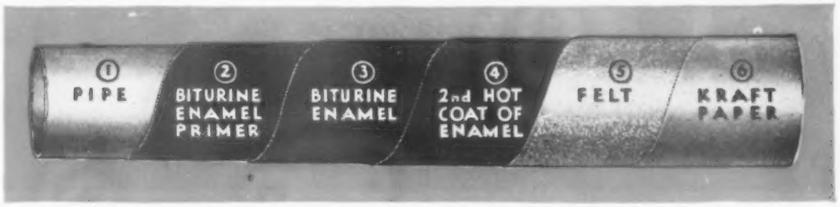
Plants for the mechanical coating and wrapping of pipe are located in the following cities for the production of the pipe manufacturers listed.

Central Tube Company, Ambridge, Pennsylvania; Spang-Chalfant & Company, Ambridge, Pennsylvania; Youngstown Sheet & Tube Company, Indiana Harbor, Indiana; National Tube Company, Lorain, Ohio; A. O. Smith Corporation, Milwaukee, Wisconsin; Youngstown Sheet & Tube Company, Youngstown, Ohio.

Others are contemplated and will be installed in the near future. Each of these plants is equipped to handle pipe up to 24 inch diameter and to conform to specifications covering a wide range of combinations of materials.

Write to our nearest office for literature descriptive of the process and for details regarding specifications.

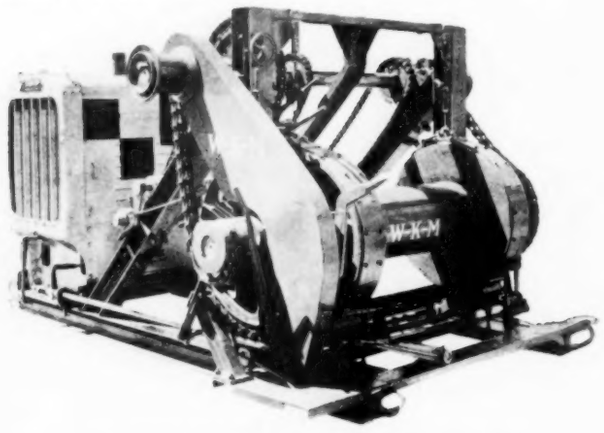
GENERAL PAINT CORPORATION
HILL, HUBBELL & COMPANY DIVISION
CHICAGO NEW YORK TULSA HOUSTON SAN FRANCISCO OAKLAND
LOS ANGELES PORTLAND SEATTLE SPOKANE



Hill, Hubbell & Company Machine Coated and Wrapped Pipe is Your Best Insurance Against Corrosion

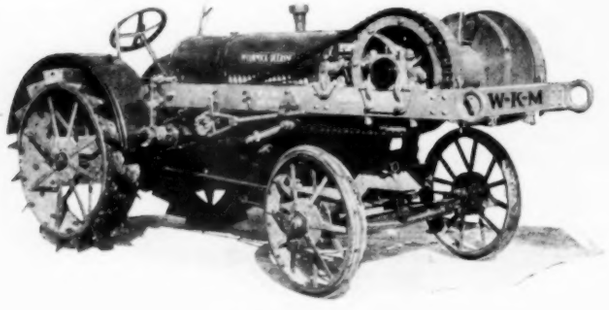
W-K-M Company

The W-K-M Company, Houston, is exhibiting the following equipment:



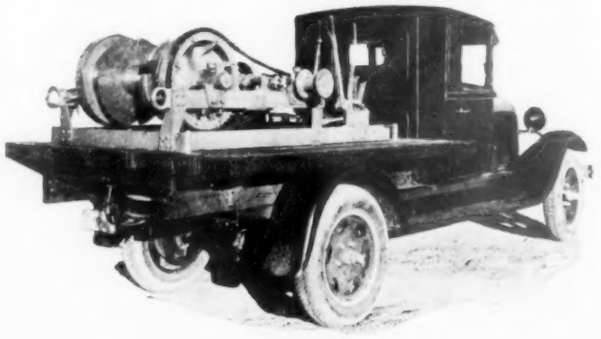
100 HORSEPOWER MASTER WINCH

Patterned after a rotary draw works, entirely self-contained, and easily portable when mounted on an Athey truss wheel wagon or similar trailer, the W-K-M 100 horsepower master winch is designed to handle rod and tubing pulling, bailing, swabbing, and other pulling work on deep wells. It may also be adapted for drilling by installing a rotary sprocket, which enables it to handle drilling to a depth of 2500 feet. The unit is equipped with a 100 horsepower Waukesha motor, or with a Hercules motor of similar specifications.



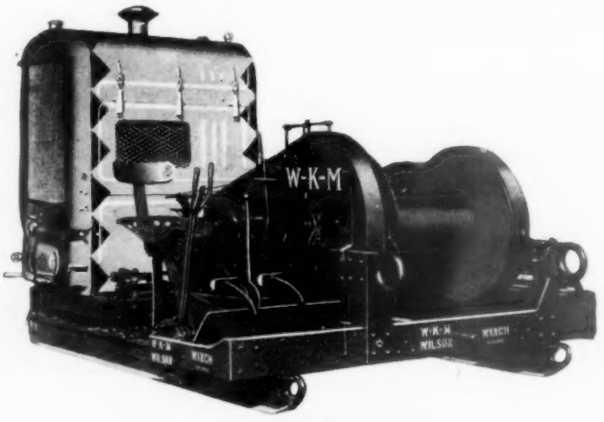
DEEPWELL WINCH

This winch handles rod and tubing pulling work, including wells down to 4000 feet deep. It has six speeds forward and one speed reverse, affording a speed and pulling capacity for every load. It is mounted on the new 15-30 McCormick-Deering tractor, and develops 66 horsepower.



SHALLOW WELL WINCH

This winch is used for pulling rods and tubing on wells 2000 feet deep or less and is portable. The unit may be mounted either on the chassis or the platform of a Ford Model AA 1½-ton truck. Power for operation is taken from the 40 horsepower truck engine through a special power take-off furnished with every machine. This take-off is heavy enough to absorb loads pulled by a 2½-ton truck. The unit can be installed by any Ford Truck Dealer.



68 HP MASTER WINCH

The W-K-M 68 horsepower master wench is a heavily built rod and tubing machine, designed especially for those companies having scattered production on large leases, or wells widely separated. It is capable of handling up to 4000 feet of two or two and one-half inch tubing on three lines. Mounted on the platform of a two-ton truck, it can be transported from well to well, or lease to lease. The unit

W-K-M Truck Winch

SKILLED SUPERVISION GUARANTEES THE QUALITY OF GULF PRODUCTS

COASTAL AND PARAFFINE CRUDES
GASOLINE — LUBRICATING OILS
NAPHTHA — GAS — OILS
WAX — PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

GULF REFINING COMPANY

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District Sales Office

New York Boston Philadelphia Louisville Atlanta Houston New Orleans

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Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
Philadelphia (Girard Point, Pa.)
Charleston, S. C.
Savannah, aG.
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

is equipped with a Hercules motor of the latest design (or any motor on specification) and a special heavy duty cotta transmission, giving three speeds forward and one reverse. Ninety-nine per cent of all pulling work which arises on a lease can be easily handled with this winch.

TRUCK WINCH

Primarily designed for handling the heaviest loads, the W-K-M truck winch is practical on any truck of ton and a half capacity and upward. Has a single line pull of five tons, and at the same time is very compact. On the truck platform it occupies only 15 inches width. The winch weighs about 700 pounds, is constructed of chromium steel and bronze, and the pedestial and worm housing are made of one single welded piece. Among its outstanding features are an irreversible worm, single-piece housing for bearings, automatic, positive lubrication, and accurately aligned pedestals.

TUBING CATCHER

The W-K-M tubing catcher has an extra large segment area to protect the casing, and three segments for three-point bearing in the casing. The segments are heavy and are made in one-piece construction. There are no cotter pins, springers, gadgets, or gimcracks.

PETOL PIPE TONGS

These tongs represent the single handle principle and are designed to reduce weight 30 per cent, and increases speed of operation 35 per cent. Tongs are instantly applied and removed. Their own weight, aided by a spring tension, engages the bits positively for perfect racheting. They are made in sizes from one to 12 inches.

PETOL TUBING TONGS

The W-K-M tubing tong is a tool designed to be safe, and simple. It is slapped on and pulled off with ease. There are no hinged members to latch or unlatch. The jaws grip automatically when thrown on pipe and release with a jerk of the hand. The tongs are made in sizes from 2-inches to 4½-inches.

ROTARY SLIPS

The line of rotary slips offered by W-K-M Company is made up of three general types to fit all makes and models of rotaries. These slips are made to grip and hold the stem or casing at a given point and release instantly on

MASTER of TREMENDOUS FORCES

.... the Control Casing Head

An irresistible wall of water, such as the Mississippi, at times, hurls toward the sea, leaves death and desolation in its wake A spouting torrent of oil, zooming from the earth, destroys lives and property just as greedily as this raging river—but for this last menace there is an unfailing master.

The O. W. I. (original and only) Control Casing Head masters the pressures encountered in drilling for oil and puts them to whatever use is desired. A sudden, bursting flow of oil or gas is checked and saved for the owner by a simple turn of the Control Head, controlling the flow in the casing. Fire hazards are eliminated and every danger from a wrecked derrick is intercepted at the mouth of the well, where sets the Control Head. A Control Head should be placed on every drilling well, ready to master any situation that might develop.

We also manufacture Roller Oil Savers, Casing Heads, Apex Polished Rod Stuffing Boxes, Chambered Control Heads and high pressure fittings for oil and gas wells and pipe lines.

Write for catalog and quotations.

Booths 51-52
Oklahoma
Bldg.

Type "C"

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

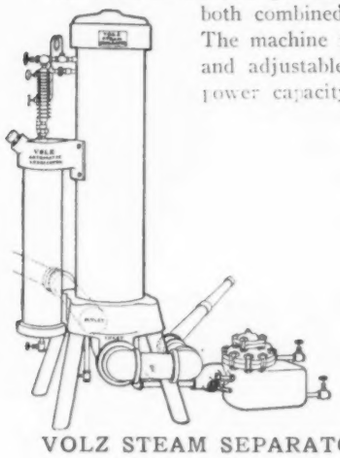
the up-pull. Being made of eight segments, four to the half-set, the slips are flexible.

TUBING SLIPS AND SPIDERS

These tubing slips and spiders are made to eliminate one elevator and one pair of tongs, and reduce tubing pulling time. The slips and spiders are made in two types, regular for shallow wells, deepwell type for deep wells.

COMBINATION OIL AND GAS BURNER

The W-K-M oil and gas burner burns either gas or oil both combined. It fires through the door. The machine is easy to install and operate, and adjustable after installation. Its horsepower capacity is 100.



VOLZ STEAM SEPARATOR AND LUBRICATOR

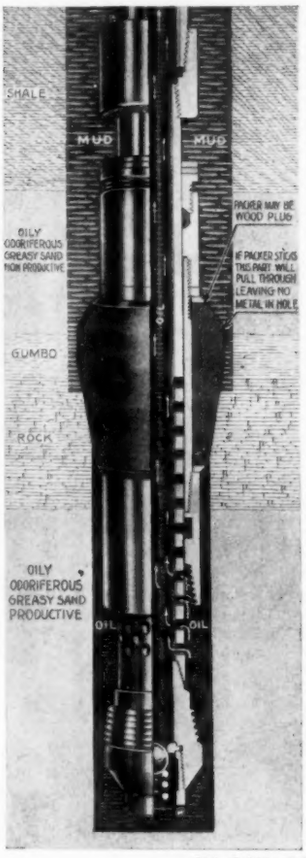
The W-K-M steam separator is designed to speed up operations immensely by furnishing bone-dry steam and vaporized lubrication for engines and pumps. It automatically mixes atomized oil and dry steam into proper proportions, according to the load. An outstanding feature is the work of keeping steam off of equipment on the lease, thus preventing rust.

PERFECTION CORE DRILL

The W-K-M perfection core barrel is equipped with the patented and exclusive split liner and designed to take and permit the recovery in perfect form of cores.

CASING CUTTER

This casing cutter cuts the casing, liner, or screen and pulls it out of the hole with one trip of the drill stem. Before making a cut, the releasing slips are set, and an upward strain is taken. This relieves the weight of the drill stem, and also the weight of the casing to be cut, from the cutters. Cutter breakage is thus reduced to a minimum. Ample provision is made to release the casing hold if more casing is cut off than can be pulled. A new cut, higher up, can be made without coming out of the hole, by moving the tool up and taking another hold. The tool can be rotated down also and circulation maintained while going into the hole. Cutter knives are extended by fluid circulation. When the cut is completed, the pumps automatically are cut off, giving positive notice. W-K-M—H.E. Cut and Pull casing cutters are made in eight series of sizes and are furnished for cutting pipe having an internal diameter of from 3 inches to 11 inches.



FLOW TESTERS

These flow testers are made in a wide range of sizes and in three types, namely, the rat-hole type, the open-hole type, and the combination double-packer type. The latter

New Hotels in Modern Cities

HILTON HOTELS IN TEXAS

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BEAVER

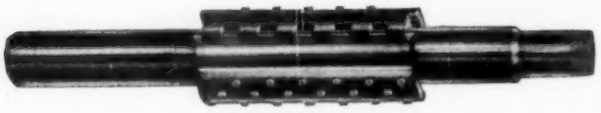
CRAFTSMANSHIP

A characteristic of the beaver and also of the skillful workmen who manufacture the products of The Garlock Packing Company, Palmyra, N. Y.

FELLING good-sized trees with their chisel shaped teeth, little beavers construct dams across streams with almost superhuman intelligence. After making their own "beaver pond" by backing up the water, they carefully select sticks, stones and mud with which to build their lodges at the edge of the pond. When completed, these "houses" are sufficiently strong and durable to withstand all the natural hazards of the locality in which they are situated. The entrances are under water—unseen and fully protected.

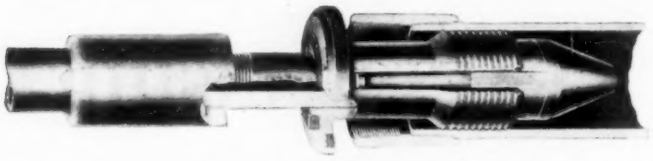
The mechanical ingenuity of the engineers and skilled workmen who build Quality Controlled Packings is not unlike the inherent craftsmanship of the beaver. Garlock trained craftsmen select all their crude materials with the greatest care by subjecting them to the most rigid laboratory tests. The basic quality of Garlock Packings is thus insured before the ingredients enter manufacture . . . and when completed the finished packings will give complete satisfaction on the intended installation as they are of a design and structure to meet its requirements.

is especially designed to test rat-holes in rotten formations where it is difficult to get a packer seal. The rat-hole type testers may be rotated and spudded while test is in progress.



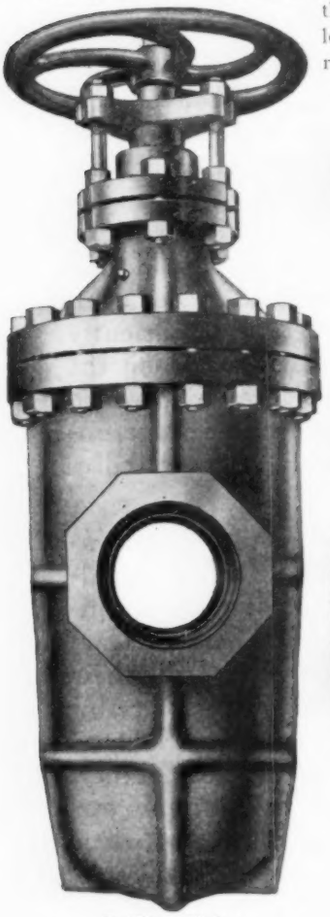
REVERSING TOOL

This reversing tool imparts a left hand motion to fishing tools connected below it, while the drill stem or fishing string rotates to the right. In operation the coupling for the drill stem connection rotates to the right. Hinged wings on the reversing tool, when rotated to the right, open and anchor the casing. The lower part of the tool, to which fishing tools are connected, then turns to the left, recovering stuck or twisted off pipe and casing.



RELEASING SPEARS

The spears are as certain and positive in their grip as they are in their release, release being accomplished by slip releasing keys.

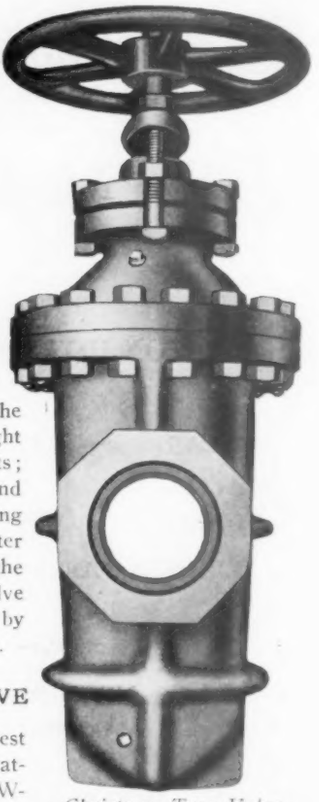


Drilling Valve

Gate Valve

DRILLING VALVE

When this valve is open, it automatically seals its own gate cavity by means of a three-part mechanism which interlocks between the seats, forming a tight, smooth flowway. The seats and other working parts are fully protected against wear and abrasion. Sealed fluid passage prevents accumulation of trash, sand, or other solid matter; holds tools to center when passing through valve, and prevents wire line from whipping or becoming kinked. The valve is made from chrome nickel steel.



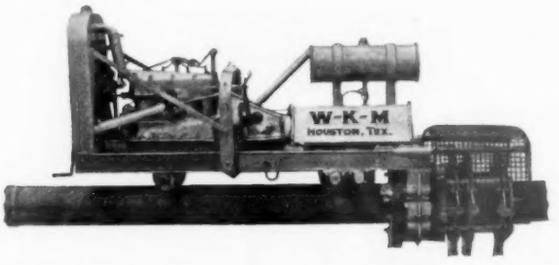
Christmas Tree Valve

GATE VALVE

The W-K-M—law gate valve is made to seal off and protect its working parts against abrasion or damage of any kind; to seal the gate cavity and insure a tight shut of the gates against seats; and to seal off the body and bonnet of the valve, preventing any lodgment of foreign matter which might interfere with the proper functioning of the valve itself. This is accomplished by a "conduit," which is patented.

CHRISTMAS TREE VALVE

This is a 3000-pound-test chrome nickel valve incorporating the same features as the W-K-M Law drilling valve. It is used to automatically seal its own gate cavity when in the open position, preventing the accumulation of foreign matter which might hinder closing in an emergency.

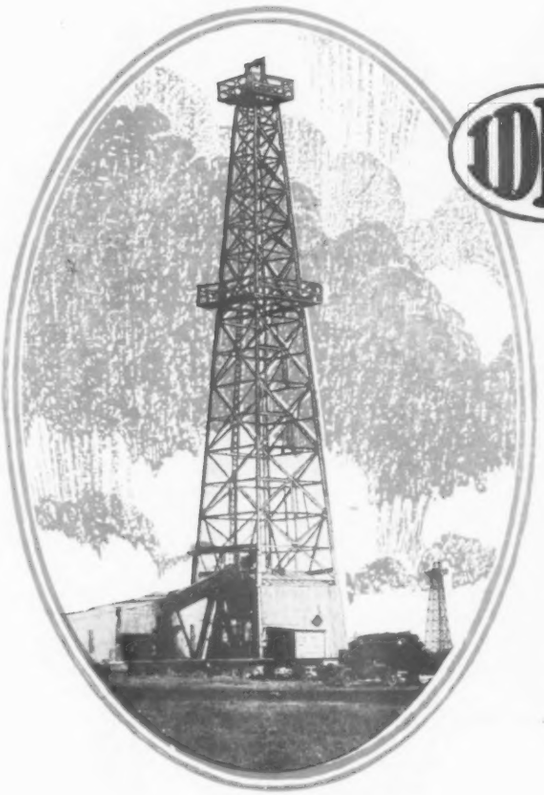


TRAVELING TYPE PIPE CLEANING MACHINE

The traveling type of machine is made in two sizes, No. 8 and No. 12. The No. 8 machine operates as a traveling unit on all sizes of pipe from 4-inches to 8-inches, both included. On a special stationary base it may also be used for cleaning pipe down to and including 2-inch. The No. 12 machine operates as a traveling unit on 10-inch and 12-inch pipe, and may be adapted, for stationary work, to clean 2-inch to 12-inch pipe.

OVERSIZE STANDING VALVE

This is a non-magnetic valve to increase working barrel fluid capacity; is designed to permit the pumps to be slowed down. All W-K-M standing valves are equipped with spirally slotted bronze crowns as standard, but if preferred they may be had with spirally slotted steel crowns.



IDECO

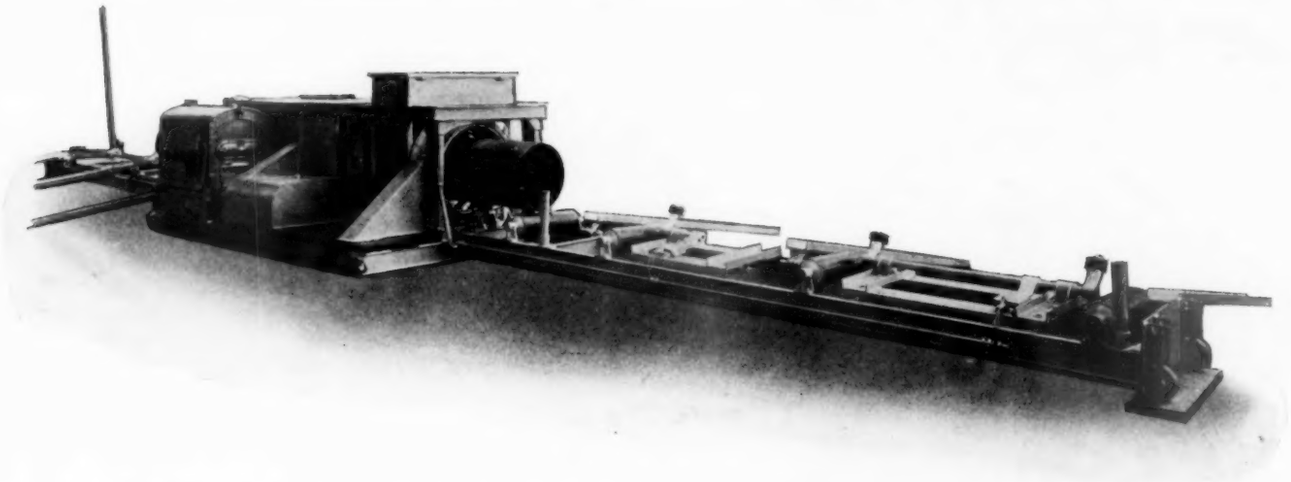
THE leading producing oil companies some time ago foresaw the economies and advantages in the all structural steel program as offered by Ideco in its derrick and rig equipment.

Smaller operators who are looking forward to the day when they may advantageously dispose of their holdings will find their property much more saleable if their wells are Ideco equipt.

THE INTERNATIONAL DERRICK & EQUIPMENT CO., Columbus, Ohio, Los Angeles, Cal.

Plants: Columbus, Delaware, Ohio; Houston, Beaumont, Texas; Torrance, California. *Sales Offices:* Columbus, Ohio; New York City, N. Y.; Detroit, Michigan; Tulsa, Oklahoma; Ft. Worth, Houston, Texas; Shreveport, Louisiana; Wichita, Kansas; Denver, Colorado; Los Angeles, California; Maracaibo, Venezuela. *Warehouses and Yards:* Columbus, Ohio; Tulsa, Seminole, Tonkawa, Drumright, Okemah, Wewoka, Maud, Sasakwa, Allen, Oklahoma City, Oklahoma; El Dorado, Wichita Heights, Kansas; Bakersfield, Taft, Torrance, California; Houston, Big Spring, Odessa, Pyote, Pampa, Borger, Mexia, Luling, Texas; Shreveport, Lake Charles, Louisiana; El Dorado, Smackover, Arkansas.

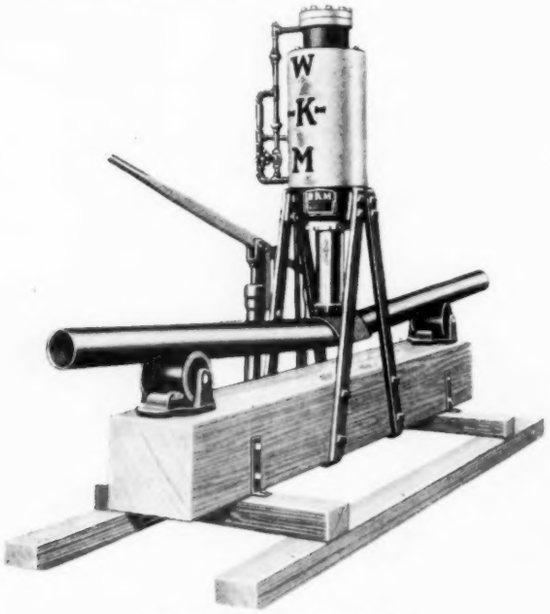
Export Representation—72 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California.



The crown locks the seat tightly against the body, eliminating the possibility of loosening or breakage.

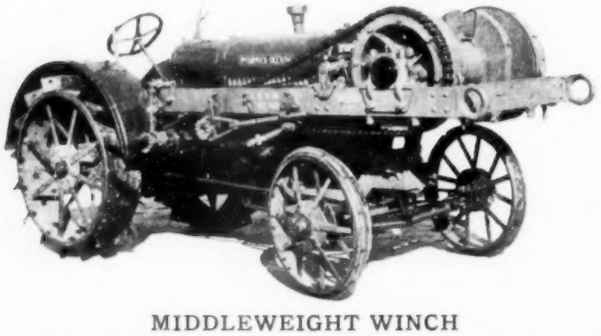
STATIONARY PIPE CLEANING MACHINE

The illustration shows the heavy type of cleaning machine manufactured by W-K-M Company. It handles all sizes of pipe from 3-inches to 24-inches inclusive, and cleans and paints the pipe in one operation.



PIPE STRAIGHTNER

This is a self-contained unit. It is portable. It straightens 8-inch or smaller pipe, or kelly joints.



MIDDLEWEIGHT WINCH

Another heavy, powerful pulling unit mounted on a special International Harvester 10-20 tractor, designed to pull rods and tubing on wells down to 3000 to 3200 feet deep. It has three speeds forward and one reverse, obtained through the regular tractor transmission. Power is taken from the tractor at the bull pinion shaft. A special sliding bull pinion permits quick disengagement of rear wheels when winch is on location. The diflerential is not in motion during pulling operation. The large drums are mounted on Timken tapered roller bearings, which in turn are mounted in self-aligned housings.

ROD HANGERS AND ELEVATOR

The W-K-M sucker rod hangers offer a number of features as follows: To prevent kinking when carelessly pulled under girt; to remove rods from danger of being run over by lease truck or wagon; to keep rods free of sand and grit which ordinarily runs down to plunger; to eliminate the expense of building rod walks; to eliminate tubing wear due to kinked rods; to prevent danger of oil soaked rod walks and to make hanging simpler, faster and cleaner. The illustrations show both the stationary and the portable types of W-K-M rod hangers.

Nelly Naught, nearly known at High, New Mexico says: "THERE AIN'T NO TOOLS LIKE GUIBERSON'S"

Class! Gosh all hemlock! You said it! And when it comes to knowing what she wants, "there ain't no gal like Nell."

"But about them tools," says her pa, "Nell's been listenin' to them driller fellers, workin' over in the north pasture. An' I sez to her, Nell, sez I, ye can believe what they sez about them tools, but jes don't ye go no further."

"Better Be Safe Than Sorry"

THE GUIBERSON CORPORATION
Box 1106, DALLAS, TEXAS
California Branch: 1506 Santa Fe Ave., LOS ANGELES
402 W. First St. TULSA — 321 So. Osage St. PONCA CITY — 505 Trust Bldg. NEWARK, O.

GUIBERSON

BETTER BE SAFE THAN SORRY

Athey Truss Wheel Wagon Company

OIL FIELD WAGON

Athey Truss Wheel Wagon Company is featuring its Model 10T-1000 universal tractor wagon which is capable of handling 23-foot casings when coupled in train, and

which loads up to 28-foot length when operated singly due to its unusually long wheelbase.

This 15-ton unit offers exceptionally light running qualities, and is featured for its working qualities in any season under ground conditions prohibiting the use of round wheel equipment.

The frame is constructed with truss type supporting rods, as is mounted on a pair of Athey truss wheels in such a position as to place nine-tenths of the load weight on the track wheels. The front gear is used merely as a balancing unit. Tracks of the special heavy duty truss wheels are cast of high carbon chrome alloy steel, heat-treated to assure maximum resistance to wear.

The 7½-foot bunks and quick operating chock blocks permit carrying capacity loads and ease and speed in loading and unloading. Equipped with platform or special body this model Athey wagon is used extensively for mounting rotary draw works, pumps, diesel electric power plants and other heavy aquipment where portability is an advantage.

International Derrick & Equipment Company

DRILLING AND PUMPING UNIT

The Ideco display is featured by a derrick built for demonstration and showing the Ideco chain driven drilling pumping unit complete with beam, pitman and counterbalance.

Many other items of drilling and well operating equipment are shown, such as wheels, and incidentally a tubing catcher, mounted on tripod to demonstrate the method of operation.

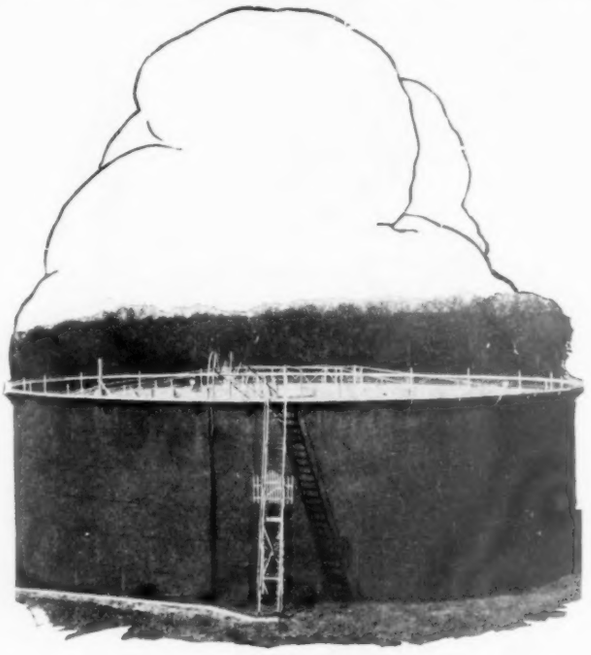
The Boykin Machinery & Supply Company greyhound line, recently purchased by the International Derrick & Equipment Company, is also on display, including the tubing hoist, tubing block, make-up post, rotary draw works and traveling block. The Boykin 27 make and break rotary and straight line crown block is being exhibited for the first time.

IDECO Drilling and Pumping Unit

Chicago Bridge & Iron Works

TANK ROOFS

Chicago Bridge & Iron Works is this year featuring two types of tank roofs, products designed and constructed for



Wiggins Roof

eliminating evaporation losses. Small scale models of the Wiggins roofs are on display at this exhibit.

The Wiggins floating roof rides directly on the oil in a tank, to eliminate vapor space. It is made to blanket the oil, even at the tank shell. There a seal closes the space between the roof deck and the tank shell in an effective manner by providing a long, sliding contact with the shell.

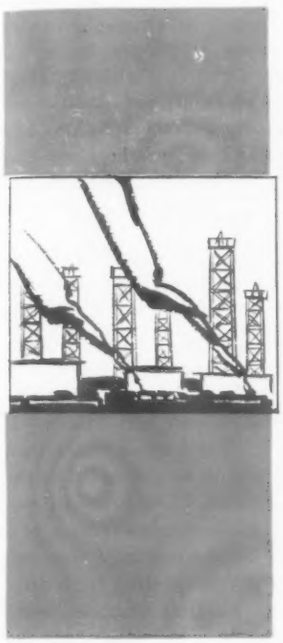
The Wiggins floating roof is designed to stop filling losses in addition to protecting the oil at all levels.

The Wiggins breather roof is designed to stop breathing losses from oil storage tanks. It is fastened solidly to the top of the tank shell and supported by a special type of framing which slopes downward slightly inside the tank. The plating lays on the framing, but is not fastened to it. When the vapor inside a breather expands, the roof flexes up, making room for such expansion without allowing vapor to escape.

The Wiggins breather roof is equipped with especially designed vents. The volume relief is mechanically operated, opened by means of a pull rod engaging in the roof framing after it has expanded a certain predetermined distance.

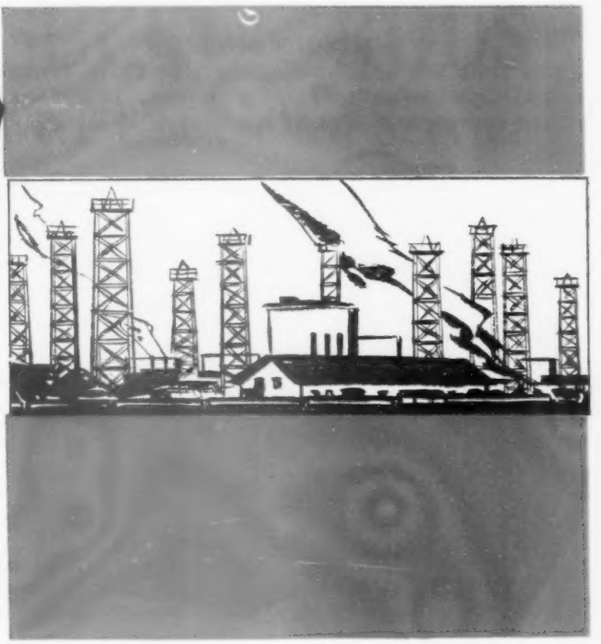
Timken Roller Bearing Company

The Timken Roller Bearing Company's exhibit consists of a selection of bearings suitable for use on different types of oil field equipment.



OIL MEN!

GIVE YOUR TIMBER A CHANCE



Swamp and salt-water locations are battle grounds where your timber must pit its strength against the Teredos . . . an army of borers, honey-combing untreated rig foundations, piling and timber as a machine gunner mows down a column of defenseless men.

"Black Beauty" products—piling and timber treated with the exacting process of the Texas Creosoting Company—defeat the Teredo. The "Black Beauty" process gives your wood a coat of armor, adding many years service and a salvage value completely lost otherwise.

It not only defeats the Teredo in swamp and water, but additionally protects your timber against the inroads of Termites and Fungi in other locations.

The "Black Beauty" Department of Petroleum is equipped to give the oil industry a creosoted timber service designed to meet its particular requirements. This department is directed by an expert engineer, backed by creosoting technicians of 30 years experience. Send your specifications to this corps of specialists.

QUICK DELIVERY

Send us your specifications —your blue-prints for rig foundations — and we will keep the material on hand for you. To be shipped when you give the word.

In this way you can solve your lumber problems in advance. When you need your materials you will have them . . . without any last minute delays or substitutions. Shipments are made to your location by rail or water from our plant on the Sabine River.

"BLACK BEAUTY" *Products*

TEXAS CREOSOTING COMPANY

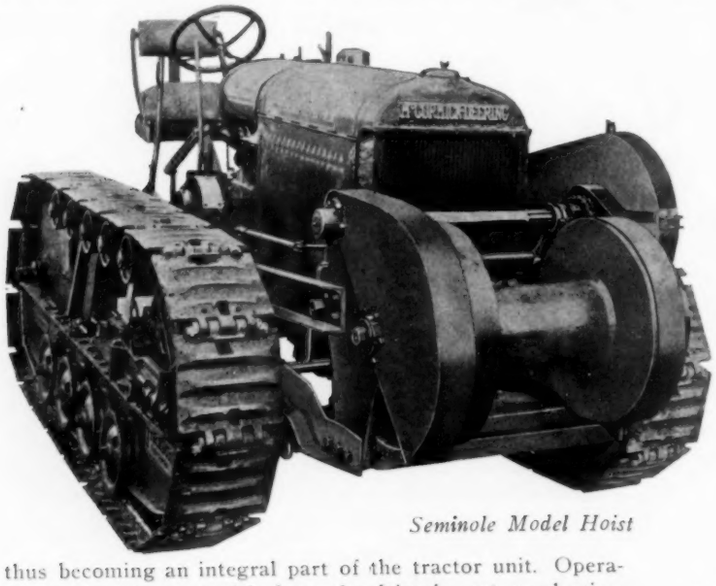
ORANGE, TEXAS **HOUSTON, TEXAS**

Muskogee Iron Works, Inc.

The following tractor hoists and booms manufactured by the above named company, are being displayed in a combined exhibit with their distributor, the Resistor Engineering Corporation of Tulsa.

SEMINOLE MODEL

This hoist will be shown on the Model DH Trackson with McCormick-Deering Model 20 tractor. It is mounted on and entirely supported by the track frames and axles,

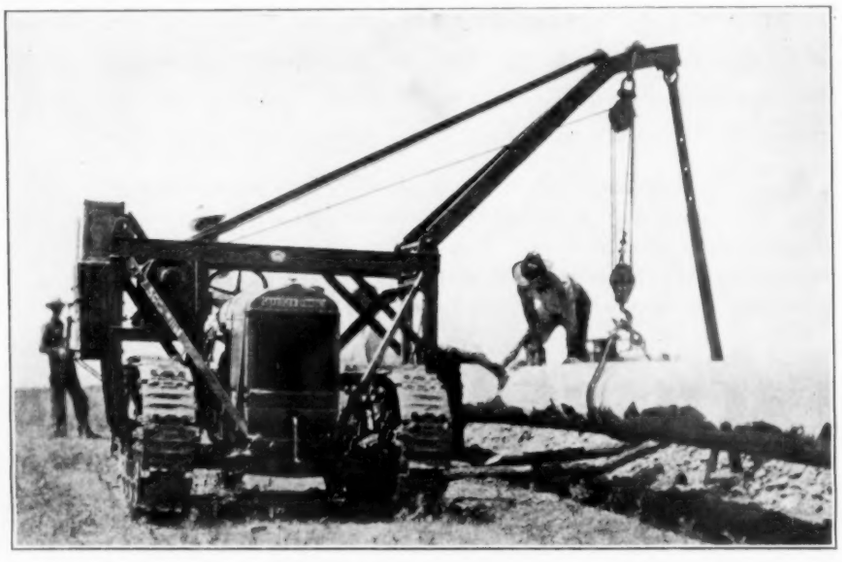


Seminole Model Hoist

thus becoming an integral part of the tractor unit. Operation and entire control is from the driver's seat, mechanism of the controls being worked out to assure ease and speed of operation together with full safety of control. This hoist is positive driven with two speeds forward and two speeds reverse, has double full floating automotive type brakes, roller chain, and pinion and gear drives with Zerk lubrication. With its drum capacity of 2600 feet of one-half inch cable and single line load capacity of 25,200 pounds, it is winning favor with the pipe lien trade and others who have difficult transportation and right-away problems.

SEMINOLE PIPE HANDLING BOOM

This boom will be shown on the Model DH Trackson with McCormick-Deering Model 20 tractor. The Seminole boom introduces a new feature in tractor boom construction. The boom support frame and the hoist are both mounted on and entirely supported by the track frames and axles, the boom hoist being built into the boom frame. This feature relieves the tractor motor of all strains which it is subjected to from other types of tractor boom assembly. The unit is furnished complete with "White" reversible power take-off, 75 feet of cable, one double and one triple block, stiff leg and counter balance weights. The accompanying illustration shows one of the Lone Star Gas Company's machines at work on a 20-inch line.



Seminole Pipe Handling Boom

MODEL CHIEF

This hoist was designed to meet the demands for a friction driven unit with sufficient capacity to handle rod and tube pulling up to a depth of 3500 feet. The hoist and front of tractor are supported by an undercarriage frame or chassis which extends the wheel base of the tractor approximately 30 inches. This feature gives the unit the best possible balance and distribution of weight, enabling the unit to load much easier than it would were the same amount of weight added to the regular wheel base of the tractor. The principal mechanical features are large friction clutches (cone type), quick free release of drum, large automotive type full floating double brakes, all controls operated from driver's seat and unusually large diameter of cable drum. This feature of the cable drums greatly lengthens the life of cables used for pulling rods and tubing.

MODEL U DOUBLE DRUM

This hoist was designed to meet the demand of tank builders and construction companies for a light friction driven industrial hoist. Features of this unit make it readily adoptable to all classes of hoist work within its load capacities. The hoist is operated and fully controlled from the driver's seat, mechanism of the controls being worked out to assure safety and maximum convenience for the operator. Model U is chain driven from either "White" two speed or reversible power take-offs with friction clutches (cone type), full floating brakes, positive locking drum pawls and Zerk lubrication. Cable capacities are 1330 feet of one-half inch line on the lower drum and 600 feet of one-half-inch line on the upper drum. Single line load capacities are 8000 pounds on the lower drum and 6000 pounds on the upper drum.

Black Sivalls and Bryson, Inc.

VAPOR PRESSURE TANK

Black, Sivalls and Bryson, Inc., Bartlesville, Oklahoma, is displaying a perfection vapor pressure tank.

These tanks are equipped with six angle iron tie rods with heavy tie rod gussets bolted to bottom angles. They are of flange type construction with large size clean-out box and inside ladder. Thief hole pressure vacuum valve is standard equipment with vapor pressure dome and manhole.

For Strength and Uniformity Use

WICKWIRE SPENCER WIRE ROPE

Change to the triangle when fishing begins!

WICKWIRE SPENCER STEEL COMPANY

41 East 42nd St., New York City

Wickwire Spencer Sales Corp.
1304 The Philtower,
Tulsa, Okla.

Acme Tool Co.,
Breckenridge, Texas

T. T. Word Supply Co.
Houston, Texas

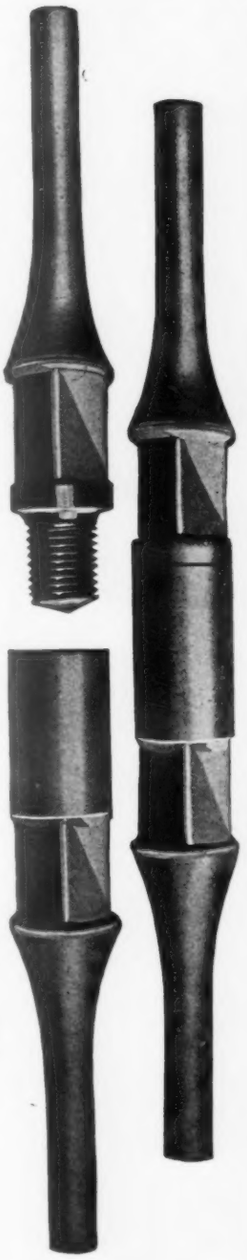
A. F. Keck & Co.
Butler, Pa.

WICKWIRE SPENCER
UNIFORM WIRE ROPE

BUFFALO SUCKER RODS

Give Unexcelled Service

Buffalo Sucker Rods have been so successful that they have established a reputation for service unexcelled by any other oil field equipment. This rod was developed through close co-operation with oil producers — developed to meet a specific need— and it does.



ORDER BUFFALO RODS NOW

Whether you are drilling in Venezuela, Pennsylvania or Texas, Buffalo Rods will do the job well, with fewer shut-downs and breaks.

Write for Catalogue

BUFFALO BOLT COMPANY

NORTH TONAWANDA, N. Y.

SALES OFFICES

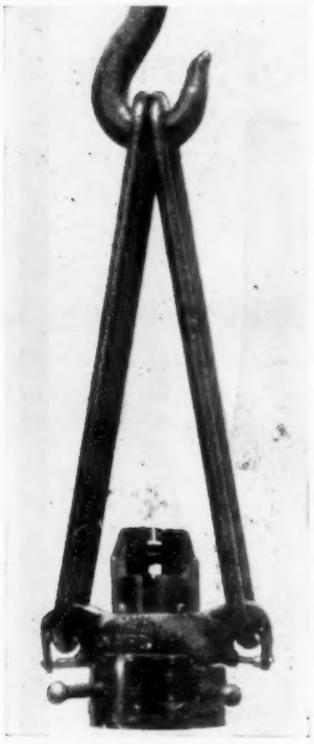
Monadnock Bldg.,
Chicago, Illinois

General Motors Bldg.,
Detroit, Michigan

Bovaird Supply Company

TUBING ELEVATOR

Boviard Supply Company this year is featuring the new split slip type tubing elevator, designed for safety and speed following two years of field and shop tests.



Bovaird Tubing Hoist

Outstanding is the use of tapered slips with a positive release that is independent of the slips. The two halves of the bowl rock away from each other when the load is released. There are four slips to a set. They have horizontal rows of teeth for engaging the tubing and they are specially heat treated above the body of the elevator and slips are two lugs, called automatics, concaved to fit the tubing closely and not to pass the coupling. These are removable and interchangeable and a set is required for each different size and style of tubing.

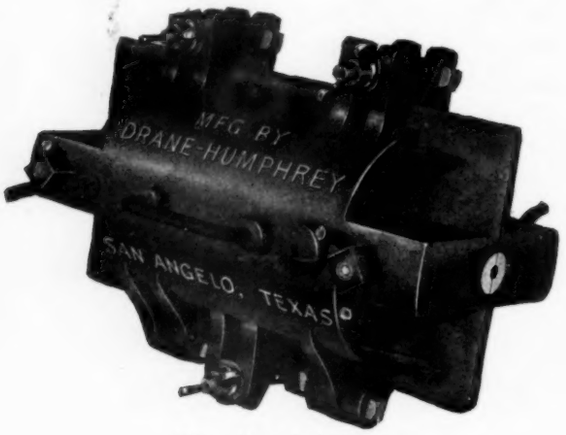
In service the elevator is snapped around the tubing, the gate closing automatically. In the upward travel of the elevator the automatics come in contact with the couplings. This forces the slips downward in the tapered bowl, compressing the springs, and the slips engage the tubing. The upward pressure of the automatics on the tubing coupling; at no time greater than the relative slight pressure required to compress the slip springs; is relieved when the slips engage the tubing.

Drane-Humphrey Company

WIRE LINE LUBRICATOR

The Drane-Humphrey Company of San Angelo, Texas, is displaying this year its new lubricator for lubricating wire lines through the application of the new Insuline No. 269 lubricant.

The lubricator is designed to eliminate waste of both time and material in its method of application. It cleans the line and applies the lubricant in a single operation. It further permits the removal of all the unused lubricant in the machine. No. 269 lubricant offers deep penetration and has the property of forming a surface film over the entire line, thus preventing the evaporation of the highly penetrating lighter oils contained in this compound.



Wire Line Lubricator

An added agent by this wire line lubrication system for the purpose of the retention of these lighter oils is a fiberous material that is forced into the strands of the rope and acts much in the same manner as waste holding oil in a bearing box.

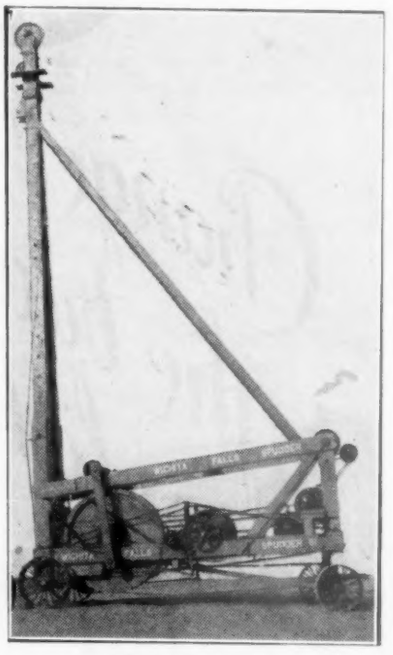
The manufacturers state that No. 269 lubricant is insoluble in any refined or crude product, water, or any alkaline solution which might be encountered in drilling operations.

Inquiries concerning the new Drane-Humphrey lubricator may be mailed to the San Angelo office or the Fort Worth branch office, located in the Petroleum Building.

Clark Machine Company

DRILLING MACHINE

The Clark Machine Company is exhibiting the Model 61 Wichita Falls spudder, which runs regular standard tools.



Clark Drilling Machine

The machine is practical, according to the manufacturers, for drilling to 4000 feet and cleaning out to 5000 feet. It is mechanically designed and constructed to stand the heavy demands subject to this depth of drilling.

Drums and sheaves are balanced and mounted on roller and ball bearings, the latter in the road wheels making it easy to move.

Model 61 has a 98-inch band wheel that runs a 14-inch belt. Height of the mast from ground to crown sheave is 50 feet. Approximate weight of the machine is 32,000 pounds.

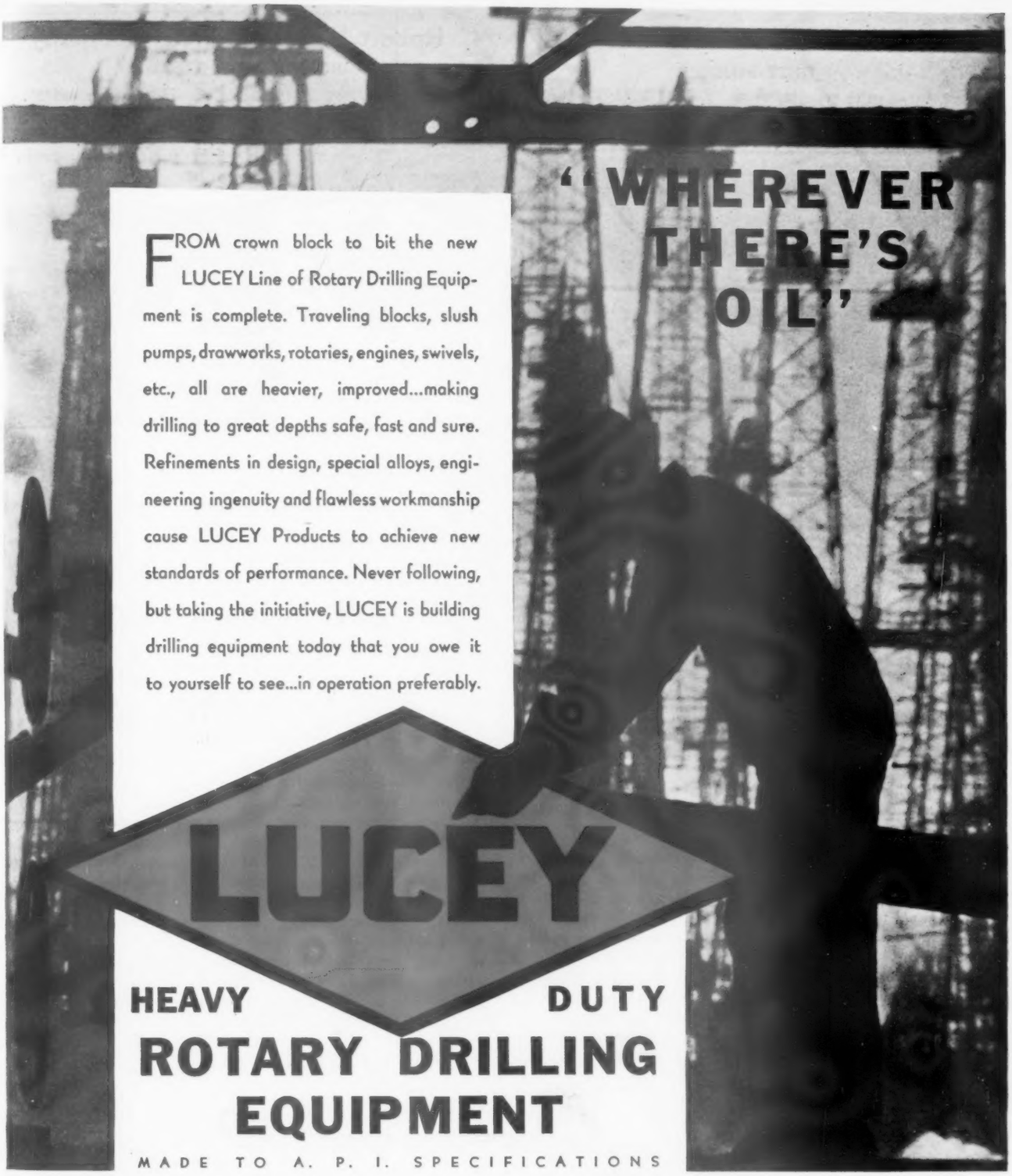
Pyrene Manufacturing Company

FIRE EXTINGUISHING PRODUCTS

The Pyrene Manufacturing Company, Kansas City, is exhibiting a general line of its equipment and products for extinguishing fire.

The fire extinguishing products consist of Pyrene extinguishers in the one pint, one quart, 1½ quart, one gallon and two gallon sizes. The Phomene (foam type) extinguishers in the 2½ gallon, 10 and 40 gallon sizes.

The Guardene type of 2½-gallon soda and acid extinguisher is also being shown. Pyrene cahins are displayed in both truck and passenger car sizes.


"WHEREVER THERE'S OIL"
FROM crown block to bit the new LUCEY Line of Rotary Drilling Equipment is complete. Traveling blocks, slush pumps, drawworks, rotaries, engines, swivels, etc., all are heavier, improved...making drilling to great depths safe, fast and sure. Refinements in design, special alloys, engineering ingenuity and flawless workmanship cause LUCEY Products to achieve new standards of performance. Never following, but taking the initiative, LUCEY is building drilling equipment today that you owe it to yourself to see...in operation preferably.
LUCEY
HEAVY DUTY
ROTARY DRILLING EQUIPMENT
MADE TO A. P. I. SPECIFICATIONS

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NEW YORK . . 3505 Woolworth Bldg.
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PARIS . . (ler) 55 Rue de Rivoil
TULSA . . 224 E. Brady St.
SHREVEPORT . . P. O. Box 116
LOS ANGELES . . 5043 Santa Fe Ave.
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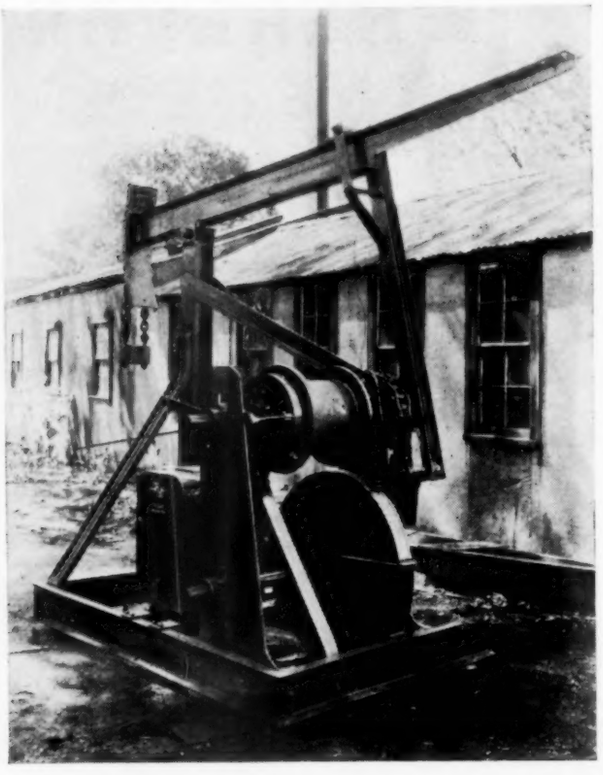
WICHITA FALLS . . Bradford Supply Co.
CASPER, WYO. . . Champion Supply Co.
BEAUMONT . . Norvell-Wilder
TULSA . . International Supply Co.
LOS ANGELES . . The Oil Well Equipment Corp.
FT. WORTH and WINK . . Hercules Supply Co.
WICHITA . . Bridgeport Machine Co.
San Fernando, Trinidad, B.W.I., Ploesti, Roumania

Reschke Machine Works Company

UNIT PUMPER

The Reschke Machine Works Company of Wichita, Kansas, is featuring the Type C unit pumper. This machine is built entirely of steel and the bushed roller chain



through which the oscillating motion of the beam is obtained has a direct up and down stroke of 36 to 60 inches.

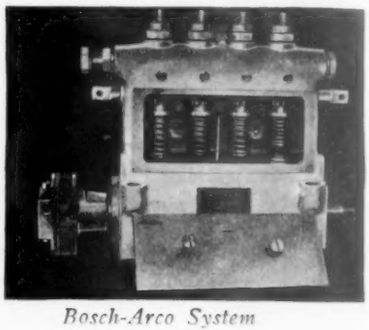
The lower sprocket eight inches in diameter gives a direct purchase equal to an eight-inch stroke and not more than four inches off center. The Sampson post, being set on a ratio of two to one at an 18-inch stroke, exerts a power equal to a crank motion two inches off center. The upper sprocket 16 inches in diameter gives a larger radius, consequetnly a slow stop and start of lifting the fluid, The pitman is connected to a patent link bearing which is so constructed that the load will not kink nor place abnormal side strain on the links. It has a removable bushing making wear replacements easy at minimum cost.

The pitman pin is made of chrome nickel steel capable of carrying any load required of it without strain. Both the upper and lower shafts are made of 2½-inch cold rolled steel. All bearings are provided with the Alemite lubricating system. The main frame sills are made of eight-inch channel.

Robert Bosch Magneto Company

BOSCH-ARCO SYSTEM

The Robert Bosch Magneto Company, Inc., is exhibiting the Bosch-Arco system of fuel pumps and injector nozzles for Diesel type heavy oil engine, using the solid injection principle. These are furnished for engines of from one to six cylinders and a wide range of horse power. This system is designed to give heavy oil engines a speed range and degree of flexibility comparable to that of gasoline engines, in addition to the economical, low operating cost and other advantages. One feature of the exhibit is a motor driven demonstration of the Bosch-Arco system, a glass cylinder being used to show the time injection of fuel.



Bosch-Arco System

In addition, the well known Robert Bosch line of magnetos, spark plugs and ignition equipment is shown. These are available for engines of from less than one horse power to heavy oil and gas power plants of 20,000 horse power and over.

Hopkins Equipment Corporation

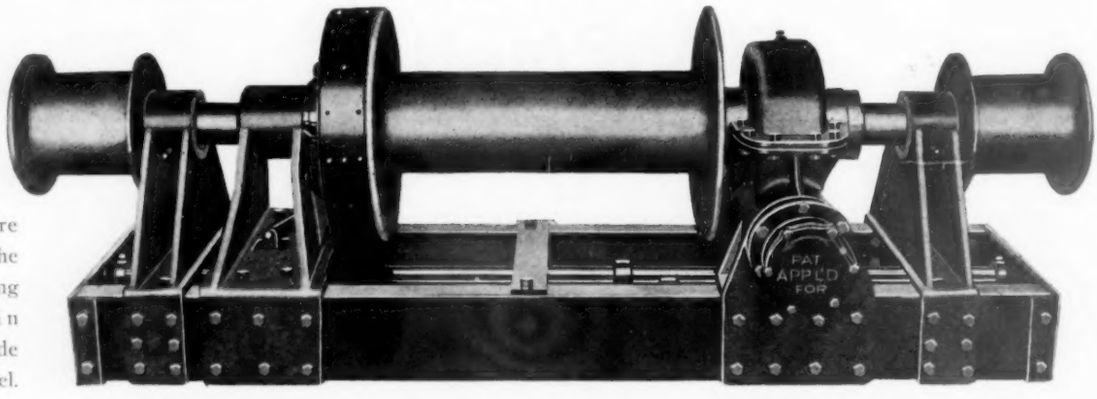
HOIST

The Hopkins Equipment Corporation of Tulsa is featuring in their exhibit a Braden heavy-duty oil field hoist tradenamed "Big Bertha." This hoist is designed for oil field use for pulling rods and tubing and is used in connection with McCormick-Deering 15-30 tractor.

The hoist is equipped with two 6-inch 40-inch brake bands equalized and contracting on both drums simultaneously. Bull wheels are not needed when pulling tubing from any depth well and barrel diameter of cable drum is 18 inches with line capacity 5000 feet of three-quarter inch wire rope. The drum clutches are operated by a new single lever arrangement, cam operated.

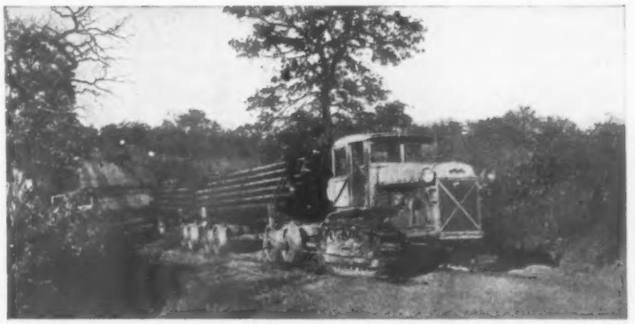
A special Braden design of rear axle housing embraces a live axle drive meeting the demand for an undercarriage of heavy duty and also providing for exceptionally high clearance. The frame of the hoist is of 21¼ pound channel and double parallel construction, all cross members being riveted to the frame.

All points to be lubricated in the Braden unit are supplied with Alemit-Zerk connections.



Braden Heavy Duty Hoist

DURABLE



FLEXIBLE

A TIP FOR PRACTICAL MEN

We might tell you about elaborate scientific tests that have been made to show exactly how big a load a MARTIN will haul, but instead of doing that we'll give you a tip—from one practical man to another.

If the ground is firm enough to bear the weight of your load a MARTIN will carry it. . . . And the wide MARTIN tires give maximum support. MARTINS are made of choice hardwood from our own mills, carefully seasoned under our own supervision. Tough steel re-inforces each point of strain and our patent tongue adjustment makes it unusually flexible.

MARTIN WAGON COMPANY
LUFKIN, TEXAS
"Martins Haul Anything"

FOSTER PETROLEUM CORPORATION

Producers of

PETROLEUM, NATURAL GAS
and NATURAL GASOLINE

BARTLESVILLE, OKLAHOMA

Taylor Forge & Pipe Works

FORGED FLANGES

The Taylor Forge & Pipe Works of Chicago is exhibiting a complete line of forged steel flanges and Taylor seamless forged steel boiler nozzles, including many new types. The

Forged Flange

Taylor forged steel high hub butt welding flanges are a new development and are being used extensively in pipe line work and in all welded lines. They are designed to be welded in the field without distortion if only ordinary welding skill is employed.

A 24-inch Taylor nozzle is on exhibit as well as some smaller sizes.

A section of smooth forge welded steel pipe, with one-inch thick wall is shown, together with a short length of Taylor spiral pipe. This pipe, because of its spiral construction, is lighter than ordinary piping.

The accompanying illustration shows a Taylor forged steel butt welding flange, which is furnished in all standards faced and drilled with hubs properly bevelled for welding to pipe.

Braden Steel Corporation

DERRICK

The Braden Steel Corporation, Tulsa, is featuring the clamp joint steel derrick, which has no bolts except to fasten crown block beams, water table beams, safety platform and a few lower girts.

The patent clamp joint has inner and outer plates which are locked together by inserting a wedge-shaped pin through a "U" bend from the outer plate. These plates grip the legs and girts, the lugs on the inner plate fitting into the notches in legs and girts and thus locking them in position.

Turnbuckle rods have rivet heads drop-forged on a right angle bend, instead of hooks. These rivet heads, when inserted through the oblong slots in the plates, take hold in such a manner that the rods do not pull out until its full shearing strength is exceeded. These derricks are made in a full range of sizes and capacities.

SECTIONAL STEEL BUILDINGS

Braden standard sectional steel buildings are made for use for gasoline plants, machine shops, warehouses, engine, belt and tool houses, power buildings, manufacturing plants and airplane hangars.

The windows are fenestra factory type steel sash and are assembled in sections at the company's shop. Doors are built of strong steel frame, having all connections welded. Doors are galvanized to protect against rust and corrugated to give strength over the entire sheet. The roofs are covered with standard galvanized corrugated copper bearing steel sheets.

These buildings are furnished in practically any size and design required.

American Steel Works

TAR HEATER

The American Steel Works of Kansas City is displaying an improved model of the American Chief tar heaters.

The outstanding features of the American "Chief" heater are the extra large anti-splash beffles, the double door lifting device which enables the opening of either door very easily with handles on both sides of the heater. The draw-off valve and pipe increased to 2½-inches and set on an angle straight out from the inside vat, eliminating all elbows and turns in draw off. The pressure tank is regularly furnished with gate fill valve and special pitcher type high pressure air pump which enables you to pump fifty or sixty pounds of air pressure with a few strokes.

These heaters are equipped with patented coilless oil burner. With this coilless type oil burner distillate can be used as well as kerosene which gives a greater heat unit without coking or choking up the chamber.

The vaporizing chamber is also removable and can be renewed in a few minutes, making the burner again new. These burners are easily attached.

American Chief Heater

Colona Manufacturing Company

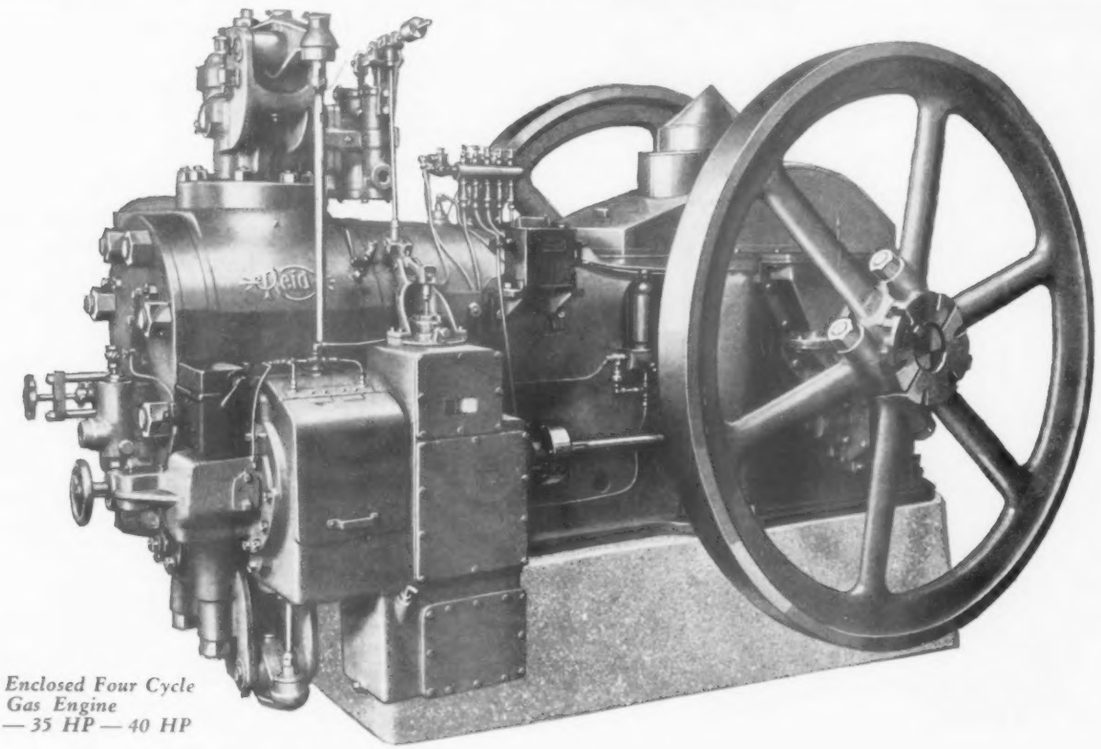
PIPE THREAD PROTECTORS

The Colona Manufacturing Company is exhibiting its patented thread protectors for line pipe, tubing, casing and couplings, showing the internal and external protectors.

The Colona rings and nipples are taper threaded to fit all sizes and classes of material. The total length of pipe thread is protected, as well as that portion of coupling thread that engages with pipe thread. The rings and nipples have been formed so as to provide maximum strength for the weight of the ring and nipple.

The protectors are designed to give protection to the ends of the pipe and couplings as well as the thread.

Pronounced Quality and Value



Type B Enclosed Four Cycle Gas Engine
30 HP — 35 HP — 40 HP

REID Type B Enclosed Four Cycle Gas Engines, with their modern mechanical refinements, have pronounced characteristics of quality and value. Ruggedness and durability are combined with smooth and efficient operation. There is stamina to withstand long periods of hard use without servicing or adjustment. And there is ample reserve power to care for the overloads.

Our new catalog—No. 50—gives a complete description of these engines. Ask for it at any branch or agency.

JOSEPH REID GAS ENGINE COMPANY
OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES—Marietta, Newark, and Logan, Ohio; Charleston, W. Va.; S. R. Shoup, 724 Board of Trade Building, Los Angeles, California.

EXPORT SALES REPRESENTATIVE—Oil Field Equipment Co., Inc., 30 Church Street, New York City.

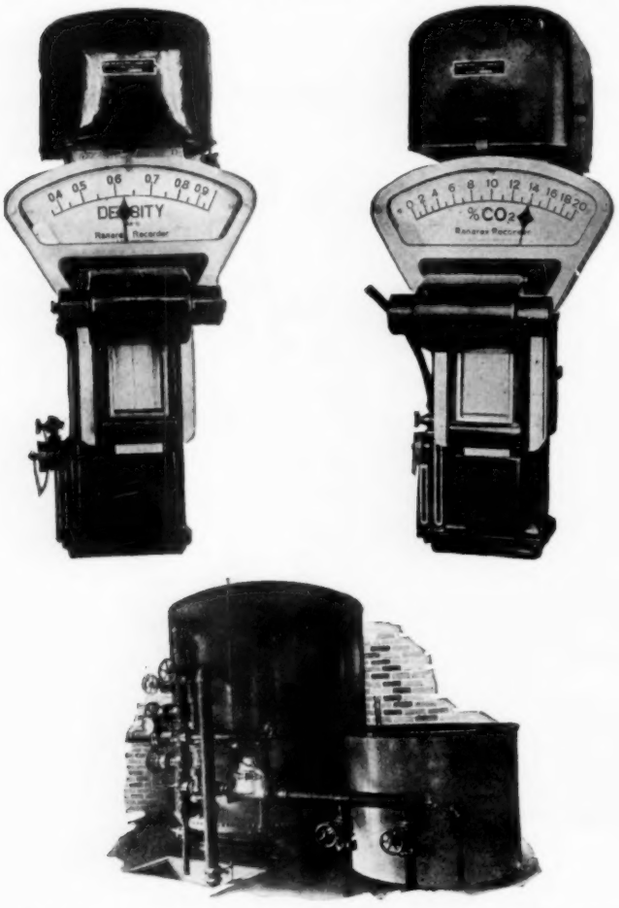
DISTRIBUTORS—Frick-Reid Supply Corp., Pittsburgh, Pa., and Tulsa, Oklahoma, Distributors for Bradford and Pittsburgh, Pa., Kentucky, Oklahoma, Kansas, Texas, Arkansas, Louisiana, and Wyoming; R. B. Moore, Bolivar, N. Y.; distributed in California by The Republic Supply Co. of California, office address 2122 East Seventh St., Los Angeles, Cal.

REID OIL FIELD MACHINERY

Permutit Company

WATER SOFTENING EQUIPMENT

The principal exhibit of the company is a model of water softening and filtering equipment such as is used in indus-



trial plants. This model is about four feet long and is made to scale after the design of a large commercial unit that delivers 100,000 gallons per day. Even the small pipes and strainers in the interior of the water softening tank have been reproduced in miniature and the model represents a very striking and clever piece of workmanship.

The Permutit Company manufactures both rapid and slow regenerating zeolite water softeners as well as all other types of equipment for treating water to render it pure, soft and correct for industrial purposes. The small plant as well as the large plant has found the treatment of water essential to economy of operation and manufacture.

The company also manufactures Ranarex instruments for recording CO_2, gas density and ammonia gas, which are exhibited. These instruments operate upon a purely mechanical principle which completely avoids the sensitive and delicate parts that break so easily in the ordinary recording devices.

Guiberson Corporation

The Guiberson Corporation is exhibiting its regular line of tools as follows:

SWAB

The Type E swab is shown in both tubing and casing sizes. It is a two-cup unit built on a single mandrel with top connections built integral with the mandrel. The tubing sizes have sucker rod pins on their upper ends, while casing sizes have A. P. I. tool joint pin. Large opening check valves are on the bottom of Type E swabs.

TUBING CATCHER

The Type "B" catcher is shown. The principal feature of this catcher is its short and compact construction. Also the fluted weight, which allows ample by-pass for fluid by the catcher. This weight being directly connected to the slips, the full weight of the striker is not resting on the spring. This lessens any tendency of the spring to fatigue and prevents vibration of weight while running in or out of the hole or while pumping.

TOOL JOINT TONG

This tong is of the most rugged design and is practically automatic in its action. It is also instantly reversible and with a very slight change can be made to use on the drill pipe as well as the tool joint.

UNDERREAMER

The reamer as it is now sold is practically as rugged and solid as a drill bit. This solidity of construction is due to the fact that its cutters are fitted into the body of the tool on paper which insures the cutters remaining firmly in place while the reaming blow is struck.

CONTROL HEAD PACKER

This packer was developed to answer the need for a packer which could be run in flowing wells against heavy pressures, yet at the same time would answer all the purposes of an ordinary packer for rotary and cable tool operations. It has a valve in the head which can be opened without moving the shell at any time desired by simply lifting the tubing a few inches. By this method the packer has no swabbing effect when pulled out of the hole.

TUBING OIL SAVER

This tool is designed to eliminate entirely the waste and danger caused by the spraying or scattering of oil around the derrick and over the men on the derrick floor, while running or pulling tubing from flowing wells. It is a split type tool which makes it assembled or removed from a string of tubing without disturbing the tubing.

SPIRAL PLUGS AND PACKERS

These plugs and packers are made of steel spiral plates stretched around a core and the space intervening these spiral plates is packed compactly with oakum. These compress easily and uniformly and make a tight seal.

TUBING STRIPPER

This tool was designed to meet the requirements of those operators who want a more compactly designed tool than our regular tubing oil saver. This tool, as its name signifies, strips the oil from the outside of the tubing as it is pulled. It also prevents gas and oil from leaking by when tubing is being run in or pulled.

DISC BIT

This bit is a four disc reaming bit, designed for high cutting speed and large water passage past the bit.

National Tank Seal Company

TANK SEAL

The National Tank Company, Tulsa, is featuring a miniature model of a "Natasco" flexible vapor-tight tank seal, this being used to demonstrate the savings effected by the particular seal, designed to eliminate evaporation and fire losses.

Other "Natasco" products specifically designed to prevent corrosion and leakage on field and refinery equipment are also on display in this exhibit.

McMAN OIL & GAS COMPANY

PRODUCERS of CRUDE OIL

AND

MANUFACTURERS of NATURAL GASOLINE

General Offices:

P. O. BOX 712 TULSA, OKLAHOMA

Superior Oil Corporation

Producers of Crude Oil

and

Natural Gasoline

H. G. DAVIES
President

E. R. PERRY
Chairman of Board

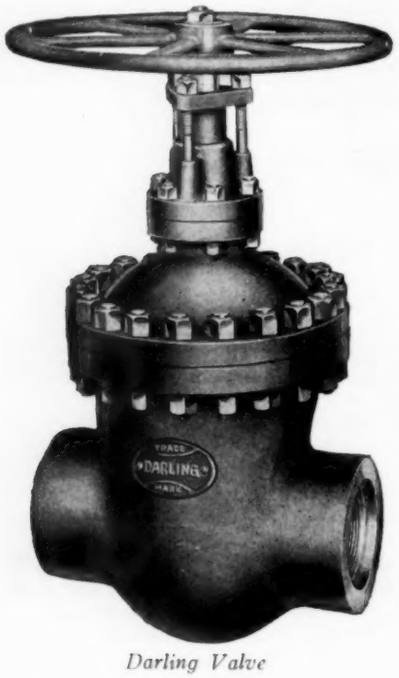
Exchange Bank Bldg. Tulsa, Oklahoma

Williamsport Wire Rope Company

The Williamsport Wire Rope Company's exhibit is given to demonstrating the methods of manufacturing wire lines. The accompanying illustration shows a reel making ma-

chine that makes reels in four major operations. Telfax tape marked hemp cores will also be on display.

Discription of the testing machines designed for accuracy, laboratories for research and necessary experiments and tests, tramways for quick movements, from building to building, of raw and finished products of the company, are available at the exhibit.



Darling Valve

Darling Valve & Manufacturing Company

GATE VALVES

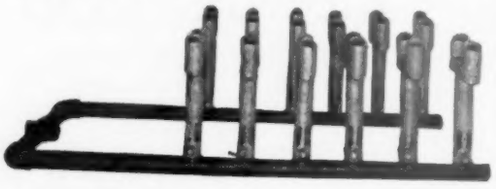
Darling Valve & Manufacturing Company, Williamsport, Pennsylvania, is displaying valves for producing, conveying and refining, including Darling forged steel gate valves for well control and flow lines, Darval semi-steel gate valves for pipe lines and field work, Darval semi-steel check valves for pipe lines, and Darling fire hydrants, gate valves and indicator posts for fire lines around refinery plants.

Christie Burner Company

LOW PRESSURE GAS BURNERS

The Christie low pressure gas burner is constructed, designed, and assembled specifically for the oil field type of boilers. It consists of units of individual burners, each mixing its own air and gas, placed at the bottom of the boiler fire box so that it fires toward the crown sheet of the boiler. From 12 to 36 individual units of burners are installed in a boiler, depending upon the size of the boiler and the horsepower developed therefrom.

The features of the latest new and improved type of Christie



Christie Low Pressure Burner

low pressure gas burner are its construction from special heat resisting cast steel, and a slight change in design to further facilitate the combustion.

National Foam System, Inc.

FIRE FIGHTING EQUIPMENT

The National Foam System, Inc., is featuring the company's chemical ejectors, which are dry powder foam machines designed for producing large quantities of foam. A National super chemical ejector with a capacity of 3000 gallons of foam per minute, another ejector with a 1200 gallon per minute capacity, which is the National Standard chemical ejector, and the National Junior chemical ejector with a 300 gallon foam capacity, are shown.

Two cans of National A. & B. foam producing chemicals, one National 2½-gallon extinguisher, one National 2½-gallon recharge, one National one quart tetrachloride extinguisher and one National one quart tetrachloride extinguisher refill are also on display. In addition there are some cut away models, photographs and literature describing the system and the products.

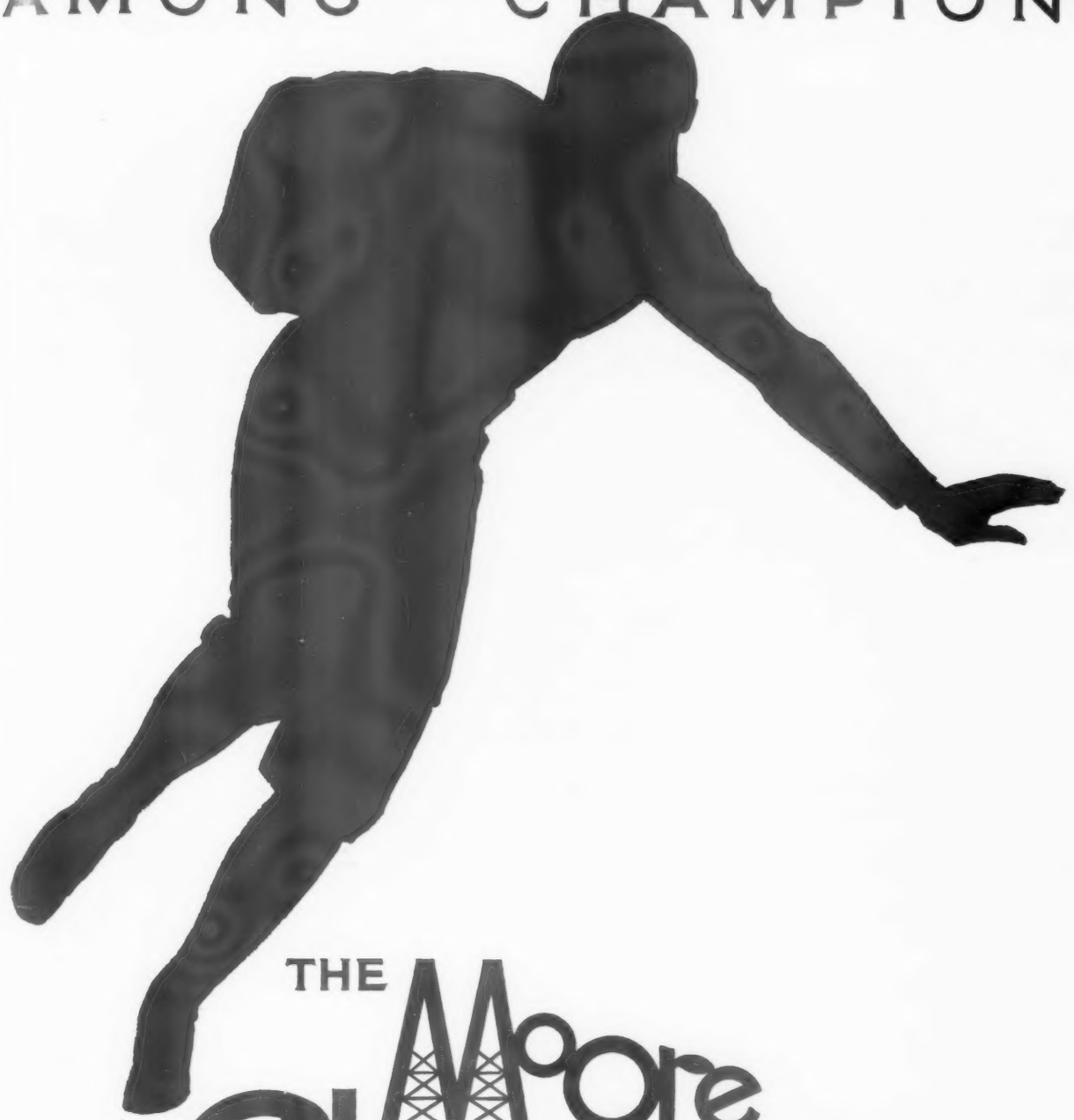
Spartan Aircraft Company

SPARTAN COMMERCIAL PLANE

The Spartan Aircraft Company of Tulsa is this year exhibiting the latest model Spartan biplane, which is illustrated here. This is the Spartan C-3-165, the commercial three-place biplane. It is powered with the Wright "Whirlwind Five" 165 horsepower motor.

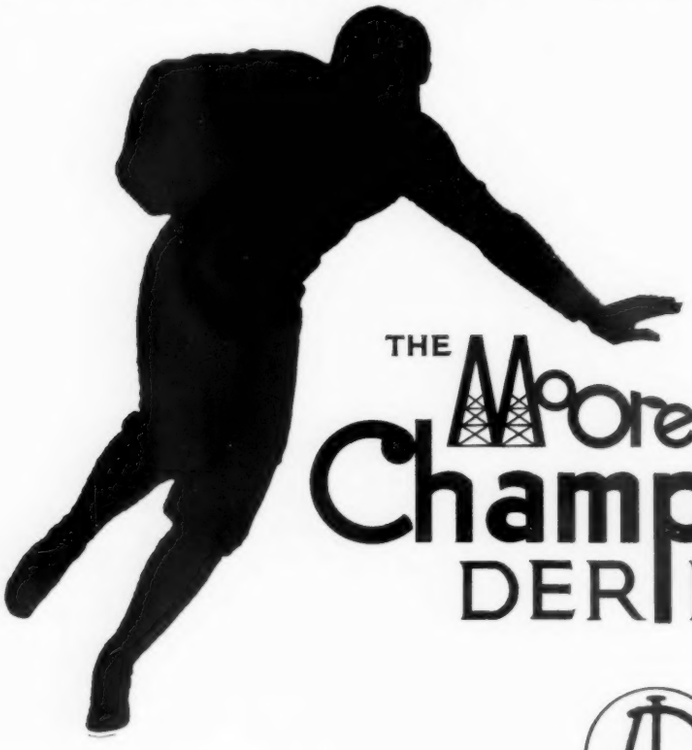
Spartan C-3-165 Biplane

AMONG CHAMPIONS

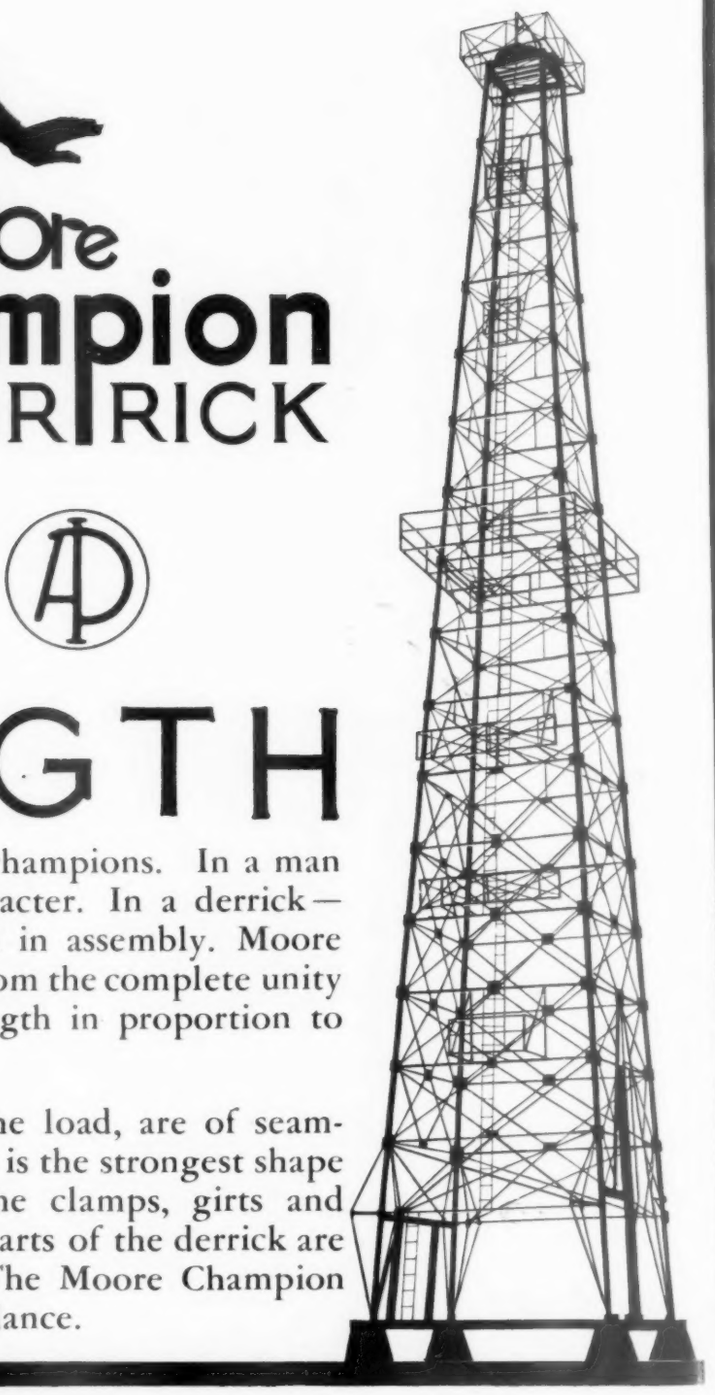


THE Moore Champion DERRICK

CHAMPION OF THE OIL COUNTRY



THE Moore Champion DERRICK



STRENGTH

Strength is the vital essential of all champions. In a man—strength of muscle, nerve and character. In a derrick—strength in design, in materials and in assembly. Moore Champion Derrick strength results from the complete unity of the several parts, each with strength in proportion to the demands upon it.

The legs, which bear the brunt of the load, are of seamless pipe of 40-50 carbon steel. This is the strongest shape for carrying compressive loads. The clamps, girts and braces, base plates, tops and other parts of the derrick are all of sturdy steel construction. The Moore Champion Derrick surely has strength in abundance.

LEE C. MOORE AND COMPANY, INC., PITTSBURGH · TULSA

ESTABLISHED 1907

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Stocks in All Principal Fields

Study of Sub-Surface Conditions In Erath County, Texas

By R. O. LaNEVE
Geologist

DURING the early development of the North Central Texas area, very little was known of the extent and character of the Bend Series of the lower Pennsylvanian age and it was several months after the discovery well at Ranger was completed before the conclusion was reached that the production of the McCleskey well was coming from a limestone formation of this series. As wells were completed in surrounding territories, correlations proved that the limestone which was producing oil and gas below the 3000-foot level was not conformable with the overlying formations of Pennsylvanian age. This led to a closer study of the sub-surface with the result of a general outlining of the Bend Arch. However, considerable part of the drilling was confined to the discovery pools and as the Bend Series covers a wide area, the changes in the formation and the Marble Falls limestone, in particular, is being better understood by redrilling of areas not thoroughly tested in the first rush of 1918-19.

Recent development in northwest part of Erath County, has proven that the east side of the Bend Arch, which has long been regarded as a low smooth depression, is not without its changes. Minor warping that occurred during the general uplift of the Bend formation was not only confined to the axis of the arch but along the slopes as well. The development of the X-Ray gas field south of Thurber, Erath County, shows a lateral arch running northeast from the Desdemona field to the X-Ray field, with highs and lows along the general arch trend. This condition on the east side of the major arch and a similar occurrence which is found in Throckmorton County, removes the Bend Arch from that of a large gentle sloping fold to one in which the changes are abrupt.

Formation Identical

The producing formation in the X-Ray field is identical, lithologically, to the formation found in the Desdemona field. The thick gray and black shales of the Smithwick formation, which is the upper member of the Bend Series, easily establishes identification of the top of the Marble Falls limestone. The first sand ranges from 20 to 60 feet below the surface and the second sand about 100 feet below the first. It appears that in the Cox well, drilled by the Shaw Oil Corporation, the two sands grade together, while in other localities the interval between is very regular. Examination of the sands found in the X-Ray field classifies with the Desdemona producing sands

(Continued on page 210)

WELL RECORD, ERATH COUNTY, TEXAS

Well Owner and Farm—	Elev.	Ls. Top	Minus Elev.	Pay Depth	Production
Peters et al, E. A. Davis	1183	3193	—2010	3350-3368	13M gas
Peters et al, Conway 1	1232	3249	—2017	3273-3279	10M gas
Eastland Oil Company, Smith 1	1145	3177	—2032	3284-3292	30M gas
Shaw Oil Corporation, Cox 1	1284	3225	—1941	3245-3385	4½M gas
Hickory Corporation, J. E. Smith	1123	3160	—2037	3230-3309	
Snebold & White, Fulfer 1	1055	3107	—2052	3138-3155	2M gas
T. P. Coal & Oil Co., J. E. Smith 1	1194	3210	—2016	3325-3338	½M gas
Culberson Brothers, Flubright	1195	3237	—2042	3256-3292	¼M gas
P. B. Goodwin, Liberty Sch.	1222	3267	—2045	3284-3289	Dry
Hickory Corporation, T. J. Mauldin	1181	3155	—1974	3220 Broken	Show of Gas
Peters et al, C. M. Barton	1107	3137	—2030	3242-	7M gas
T. P. Coal & Oil Co., E. Miller	1040	3140	—2100	3236-	Gas-water
T. P. Coal & Oil Co., Christian	1041	3100	—2058	3225-3250	
T. P. Coal & Oil Co., Garner	1075	3125	—2050	3228-	30M gas
T.P. Coal & Oil Co., E. M. Barton	1080	3156	—2076	3238-	10M gas
T.P Coal & Oil Co., W. A. Latimer	1071	3128	—2057	3235-	25M gas
Weatherall, Hill 2	1046	3215	—2169	3295-3310	Water
States Oil Corporation, Gailey	1035	2992	—1957		Dry
Baltimore Tex. Co., W. N. Perkins	1222	3236	—2014	3260-3315	Gas-oil show
Humble O.&R. Co., W. E. Brown	1309	3025	—1716	3060-3075	Dry
Robinson-Harrington, Cage Est.	1334	3926	—2592	3960-4002	Dry
Weatherall, Hill 1	1040	3221	—2179	3318-	Gas, oil and water
T. P. Coal & Oil Co., Dairy Fee	1159	3230	—2071	3280-3325	Gas at 3290 show
Texas-Manhattan, Fulfer	1059	3104	—2045	3114-3156	1 M Gas
T. P. Coal & Oil Co., Fulfer	1127	3210	—2083	3226-3255	Show Gas
Gulf Production Company, Thompson	1383	3135	—1752	3495-	Show Gas
McJunkin et al, Cooke	1408	3000	—1592	1305-3130	Oil—Gas Show
Victor Oil Company, Keith	1365	2955	—1602		
Franklin Oil Company, Shelton	1418	2987	—1569	3075-	Oil—Gas Show
Radium Oil Company, Sechrist	1473	3056	—1583	3091-3093	Oil—Gas Show

Topography of section of Erath County

Interstate Conservation Pact Idea Still Alive

TULSA, Oklahoma. — Evidently there is life in the interstate compact conference on oil conservation yet. Its pulse beats are without vigor; also without regularity. But gatherings of only a few men at points remote from the oil territory give an indication of life to an idea that went through the rigors of death at Colorado Springs June 10 and thereafter.

The latest is a press dispatch, bearing an Albuquerque, New Mexico, date line, to the effect that Mark L. Requa met in Santa Fe, New Mexico, September 30 with Wirt Franklin of Ardmore and Oklahoma City, Francis C. Wilson of Santa Fe, L. Ward Bannister of Denver, Colorado, and James A. Veasey of Tulsa, Oklahoma. Mr. Wilson was given as authority for the statement that Mr. Requa had gone to his California home "after a short conference on oil conservation problems."

Whenever Wirt Franklin leaves Oklahoma City, where he is vitally interested in the new development, it is a matter of no argument that his mission will have some connection with oil. Likewise James A. Veasey, counsel of the Carter Oil Company in Tulsa is not given to long journeys to the capital city of New Mexico unless there is some consideration of oil. As for Francis C. Wilson, he is considered as one of the best informed lawyers of the United States in matters pertaining to the whole subject of the interstate compact. L. Ward Bannister, whom memory does not connect with the Colorado Springs meeting, was no doubt there in some capacity.

Promised Second Meeting Recalled

To speculate on the possibilities that these men met Mark L. Requa in Santa Fe, New Mexico, for purposes other than consideration of another meeting on the subject is but to make sport of a fish that is already on the hook. These men did not gather to discuss the atics of the Aurora Borealis or to calculate the number of light years, which separate Mars from Jupiter. Oil and only oil was at the bottom of that meeting in Santa Fe.

It will be remembered that the Colorado Springs conference was over when delegates of the three States, California, Texas and Oklahoma, let it be known that they had gone as far as they could and that they would like a chance to report to their respective governors. The adjournment carried the stipulation of another conference be had at the call of the President of the United States.

With all these words concerning a further conference, there were those, and in large number, who looked upon the question of an interstate compact with relation to the conservation of petroleum as deader than an outlawed promissory note. Evidently not, for Mark L. Requa is going about in the land and others are meeting him.

This meeting at Santa Fe was not

(Continued on page 182)

Yates Field Is Adhering Closely To Proration

SAN ANGELO. — Producing companies and operators in the Yates field are adhering closely to their respective proration allowances, and during the month of September the field was allowed to produce 3,749,093 barrels, or a daily average of 124,970 barrels, according to figures released by Umpire Ray Richmond. These figures do not include 180,696 barrels, or a daily average of 6023 barrels of seepage oil, that was recovered by three operating units in the field, as the latter is excepted in proration allowances. The maximum daily production quota for the field has been 130,000 barrels daily since July 1, 1929, as fixed by the Texas Railroad Commission.

Distribution of Yates field production among the pipe line companies serving the area became more evenly balanced during September than any previous month. The Illinois Pipe Line Company handled 1,165,363 barrels, including common carrier oil transported for the Grayburg Oil Company to Lytle station, near San Antonio. The Shell Pipe Line Company ranked second with a total of 1,037,468 barrels, and the Humble Pipe Line Company third, with a total of 1,031,530 barrels. The latter two are the principal carriers of purchased oil in the field. The Gulf Pipe Line Company's runs amounted to 514,732 barrels, being limited to the oil produced in the field by the Gulf Production Company. A large percentage of the oil gathered and run by the Illinois Pipe Line Company is delivered to the Humble Pipe Line Company's trunk line station at Lytle for consignment to the Humble Oil & Refining Company, which has a long time contract with the Mid-Kansas Oil & Gas Company. The Texas Pipe Line Company's 10-inch carrier cuts across the field, but is not running oil from same.

The joint properties of the Mid-Kansas Oil & Gas Company and Transcontinental Oil Company, which involve about one-third of the producing area in the Yates field, produced 1,764,723 barrels during September, or nearly one-half of the total recovery. The Gulf Production Company ranks second in allowable production, and during September produced 514,732 barrels. The California Company, subsidiary of Standard Oil Company of California, produced 506,598 barrels during the same period.

Seepage oil production in the Yates field continues at a high level, even though a few large producers have been plugged and abandoned because of leaky casing seats, and during September the recovery amounted to a daily average of 6023 barrels, as compared to an average of 6572 barrels daily in August. Total amount of oil salvaged from the Pecos River, pits, trenches and "grass root" pumpers, is 1,198,402 barrels. The Continental Oil Company recovered 153,051 barrels during September, thus boosting its total to 852,887 barrels since last February. The Grayburg Oil Company's salvage efforts yielded 13,263 barrels during September, making a total of 240,956 barrels since work started late last October. The Mid-Kansas-Transcontinental interests boosted their total seepage oil recovery to 90,177 barrels by producing 14,382 barrels during the past month.

Crude production of each operator in the Yates field during the month of September is listed below, with salvage oil excluded:

Company—	Total Barrels
Mid-Kansas-Transcontinental	1,764,723
Gulf Production Company	514,732
The California Company	506,598
Simms Petroleum Company	229,629
McMan-Continental	193,120
Shell Pet. Corp.	174,708
McMan O. & G. Co.	133,882
Humble O. & R. Co.	99,095
Phillips Petroleum Co.	53,043
W. A. Moncrief-Savoy Oil Co.	19,821
Continental Oil Co.	18,769
Ed. R. Cosby et al	18,465
Grayburg Oil Co.	9,991
Kirby Pet. Co. & Edson Pet. Co.	6,937
Skelly Oil Company	2,696
Kirby Pet Co.	1,607
Plymouth Oil Co.	910
Dixie Oil Co.	367
Total	3,749,093

Oklahoma Operators Plan Drastic Production Curtailment

Plan for reducing state's output to average 660,000 barrels by proration presented to commission

By GRADY TRIPLETT
Staff Representative

TULSA.—Oklahoma Oil Producers October 8 put in motion the machinery by which the daily oil output of the state is to be brought down to an average of 660,000 barrels over a period of 80 days.

The action consisted of adoption of a plan submitted by a committee and the recommendation that the plan be put in the form of an order to be presented to the Oklahoma Corporation Commission, with petition that it be made an order of that department.

The plan met unanimous approval at a mass meeting. Since there were no objections, the action is taken as assurance that curtailment in the several fields specified will be carried through, when the petition has been approved by the state body.

The mass meeting today was the culmination of efforts begun by the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association. This resulted in the naming of a committee, with C. C. Herndon, vice president of the Skelly Oil Company, as chairman; Burdette Blue, vice president of the Indian Territory Illuminating Oil Company, R. A. Griffith, vice president of the Sinclair Oil & Gas Company, and Wirt Franklin, president of the Wirt Franklin Oil Corporation.

Excess in Prospect

It was the report of this committee that was adopted today.

One paragraph of the report read: "Your committee estimates that, in the absence of proration or curtailment, the production in Oklahoma will average 800,000 barrels per day during the period from October 12 to January 1, next: that the probable demand for Oklahoma crude during that period will be an average of 660,000 barels per day, thus leaving an excess of 140,000 barrels of production, which must be held back from current output by curtailment in some form if an approximate balance is to be maintained between supply and demands."

The program adopted to bring about this curtailment will end January 1, but the resolution calls for a meeting in Tulsa December 17 to consider the then existing production situation with a view to extending the curtailment program throughout the remainder of the winter.

The plan places the larger percentage of proration on the Oklahoma City and the East Earlsboro pools, which are considered the most serious production threats in the state now. The Oklahoma City area is under 100 per cent shut-down until October 12 and East Earlsboro is under 50 per cent curtailment until October 28.

Committees Recommendations

Specific recommendations of the committee were adopted as follows:

1. That since the shut-down order in the Oklahoma City pool expires on October 12 and there has been a general understanding that immediately thereafter the producing wells in that area would be released in order to enable the operators to obtain some production in order to equalize their situation with other pools which have been producing during the 30-day shut-down, it is suggested that the Oklahoma City pool be opened up at that time and be permitted to produce to capacity until and including October 31.

2. That at an effective date, to be determined by the Corporation Commission, but no later than October 15, all wells in Logan County, the entire Seminole district, Allen Dome, Sasakwa, and the Pearson-St. Louis area be prorated by curtailing potential output 20 per cent from said date until and including October 31.

3. That the present proration order of 50 per cent effective in the Earlsboro pool be extended to and including October 31.

4. That during November, the Oklahoma City pool and the East Earlsboro pool be curtailed 40 per cent and the remaining areas above mentioned 20 per cent.

5. That during December, the Oklahoma City pool and East Earlsboro pool be curtailed 50 per cent and the other pools above mentioned 25 per cent.

"It is the opinion of your committee that these percentage figures will be necessary to accomplish the reduction of 140,000 barrels per day in daily average from October 12 to January 1, 1930, and to bring about an approximate balance between production and consumption of crude petroleum in this state. This plan contemplates and depends upon a continuance of the delay upon the bringing in for production of wells hereafter completed in each of the restricted areas, and we suggest that on any basis of proration that may be adopted to curtail production, the drilling wells be prorated an equivalent amount of time, computed from the beginning of proration in each pool. In computing the amount of time that a well should remain shut in after cementing, or landing the final string of casing, the accumulated shut-in time and accumulated equivalent time resulting from pinching of producing wells in the particular field should be added in determining the time that drilling wells that may otherwise be completed on a certain date should be shut down, so that drilling wells will get no advantage over producing wells. This delay upon the completion of wells should apply not only to wells now drilling but also to all wells started prior to January 1, 1930.

Your committee recommends that this plan be submitted to the Mid-Continent Oil & Gas Association at its annual meeting on October 9 and that, in the meantime, it be also submitted to the operators interested in the various pools affected, so that the operators therein may consider the same and arrange for its submission to the Corporation Commission, if approved.

This committee deems early action in this matter to be essential and that some such plan should be promptly put in force.

The proration percentages recommended are that Oklahoma City shall be allowed full production from October 12 to November 1, in order to make up for the month of full curtailment from November to December 1 and under 50 per cent curtailment from December to January 1. The percentage recommendation for East Earlsboro is 50 per cent from September 28 to November 1, 40 per cent from November 1 to December 1, and then 50 per cent from December 1 to January 1.

For the Greater Seminole area, the recommendation is 20 per cent from October 12 to November 1; 20 per cent from November 1 to December 1 and 25 per cent from December 1 to January 1.

Old Fields Not Effected

The older fields of Oklahoma are expected to contribute 270,00 barrels daily and no proration is to be applied to them. The percentages recommended above are calculated to bring Oklahoma production to 678,350 barrels daily from October 12 to November 1.

Production for November is calcu-

lated to come down to 665,300 barrels. For December, the daily calculation is 642,250 barrels. Averages of these estimates will give Oklahoma 660,000 barrels daily for the 80 days.

The resolution specified that the proration be carried to other threatening pools of the state, especially Allen Dome, Sasakwa, Pearson Switch and the St. Louis area. The resolution follows:

"Resolved, That in the interest of conservation of petroleum and to meet the present condition of over production in Oklahoma, the following plan be and is hereby adopted:

"1. Oklahoma oil production shall be limited to an average of approximately 660,000 barrels per day, which figure represents the estimated present and future demand until January 1, 1930, and that figure shall be used as the basis for the limitation of production in this state until the Corporation Commission shall find from evidence that the same should be changed. The reduction of potential productoin in Oklahoma to approximately 660,000 barrels per day shall be reached by a proration of the following producing areas, to-wit: Oklahoma County, East Earlsboro, Logan County, Allen Dome, Sasakwa, the Pearson-St. Louis area, and all pools in the Greater Seminole area, as shown by maps attached hereto.

"2. Proration shall be applied on a time basis or on a percentage basis by leases, the latter according to gauges taken under the supervision of an umpire once each week as hereinafter provided. The umpire shall appoint a representative of an operator owning a lease adjoining the one of which the gauge is being taken, and it shall be the positive duty of such representative throughout the day the gauge is being taken to witness and verify the same, the operator whose lease is being gauged and the witness jointly to file with the umpire a statement showing the gauge of potential on the particular lease.

"3. That since the shut-down order in the Oklahoma City pool expires on October 12 and there has been a general understanding that immediately thereafter the producing wells in that area would be released in order to enable the operators to obtain some production in order to equalize their situation with other pools which have been producing during the 30-day shut-down, it is suggested that the Oklahoma City pool be opened up at that time and be permitted to produce to capacity until and including October 31.

"4. That at an effective date to be determined by the Corporation Commission, but not later than October 15. All wells in Logan County, the Seminole district, Allen Dome and the Pearson-St. Louis area be prorated by curtailing potential output 20 per cent from said date until and including October 31.

"5 That the present proration order of 50 per cent effective in the Earlsboro pool be extended to and including October 31.

"6. That during November, the Oklahoma City pool and the East Earlsboro pool be curtailed 40 per cent and the remaining areas above mentioned 20 per cent.

"7. That during December, the Oklahoma City pool and East Earlsboro pool be curtailed 50 per cent and the other pools above mentioned 25 per cent.

"8. To establish equality between producing and drilling wells, each well now drilling in any of said areas, or which may be commenced prior to January 1, accumulated shut in time and accumulated equivalent time resulting from pinching of producing wells from the beginning of the proration period in each pool, said period of delay to be computed in each instance after allowing seven days for the cement to set.

"9. The administration of this plan is committed to Ray M. Collins as umpire, who is hereby authorized to employ as many assistants as he shall deem necessary."

In the absence of C. C. Herndon, chairman of the committee, E. B. Reeser, president of the American Petroleum Institute, was elected chairman of the mass meeting. The plan of the committee was introduced by Wirt Franklin.

J. S. Sidwell of the Prairie Oil & Gas Company offered the motion that the plan be adopted. William N. Davis, president of the Mid-Continent Oil & Gas Association, seconded.

Dana H. Kelsey, vice president of the Prairie Oil and Gas Company gave a report of an agreement of curtailment reached earlier in the day affecting the new McPherson County, Kansas, area. Messages of approval were read from C. C. Herndon, Frank Phillips, president of the Phillips Petroleum Company and R. C. Holmes, president of The Texas Company.

Atlantic Contracts to Buy Oil From Gulf

San Angelo, Texas.—Gulf Production Company is reported to have made new contract to sell to Atlantic Pipe Line Company, subsidiary of the Atlantic Refining Company, 5000 barrels of Hendrick field crude daily throughut 1930 at the prevailing posted price f.o.b. wells. This contract will involve total deliveries of about 1,825,000 barrels of 28-30 gravity oil, and supplements a 5000-barrel daily contract held with Atlantic for the last 10 months in 1929. Arrangements have also been made for the Gulf Production Company to deliver to the above carrier an additional 5000 barrels daily during the latter part of November and all of December, but after January 1 only the new contract will be in effect. The 5000 barrels daily contract Gulf Production Company has held for the past year with Humble Oil & Refining Company.

Interstate Conservation Pact Idea Still Alive

(Continued from page 180)

the first. Several weeks back he was in Salt Lake City, Utah, and Wirt Franklin was there at the time. Representatives of the "public land states" also were present. Without the privilege of listening to the words uttered there, the conviction is hereby expressed that oil was the foremost topic and that the interstate compart was tangled with it.

It is not inconsistent but it is singular that Mark L. Requa and Wirt Franklin should be meeting so frequently. The friend of President Herbert Hoover had no more severe critic at Colorado Springs than this man Franklin from Oklahoma. The criticism, however, was of the proper type, spoken right out in meeting and properly coated with regret for having to mention such.

In reply Mr. Requa said that he felt sorry for only one thing—which was that Mr. Franklin considered it necessary to preface his criticism with such profuse regret and apology. So the two men, while differing in regard to procedure in the matter of oil conservation, at least met as worthy foemen and evidently their meeting has given each a wholesale respect for the other.

An aftermath of the Colorado Springs conference was that Wirt Franklin was elected president of the Independent Petroleum Association of America, pledged to work in behalf of tariff on crude oil imports and also to work for a modification of departmental order No. 338, which has removed some of the public domain of the Mountain States from oil development. Since then Mr. Franklin has been giving considerable time to the tariff matter, also to the organization of the new association, further to the matter of conservation in Oklahoma and not a little to the development of his properties in the Oklahoma City field. The 30-day shut-down of that field is a credit to the efforts of Wirt Franklin.

While Mark L. Requa left Colorado Springs with little accomplished and with many believing the interstate compact dead, he issued a statement to the effect that progress had been made and that another meeting would be held.

Another man at Santa Fe, Francis C. Wilson, was called upon to explain the substance of an interstate compact. Mr. Wilson has had long experience in compacts between states, especially in regard to water rights in the Rocky Mountain area. His remarks at Colorado Springs were enlightening. But soon after the Colorado Springs meeting, a break occurred between Mr. Wilson and the governor of New Mexico. Reports were that there had been disagreement over events at Colorado Springs.

James A. Veasey of Tulsa was a member of the Oklahoma delegation at Colorado Springs, along with J. Berry King, now attorney general, and E. W. Marland of Ponca City.

Markets--Production--Crude Prices

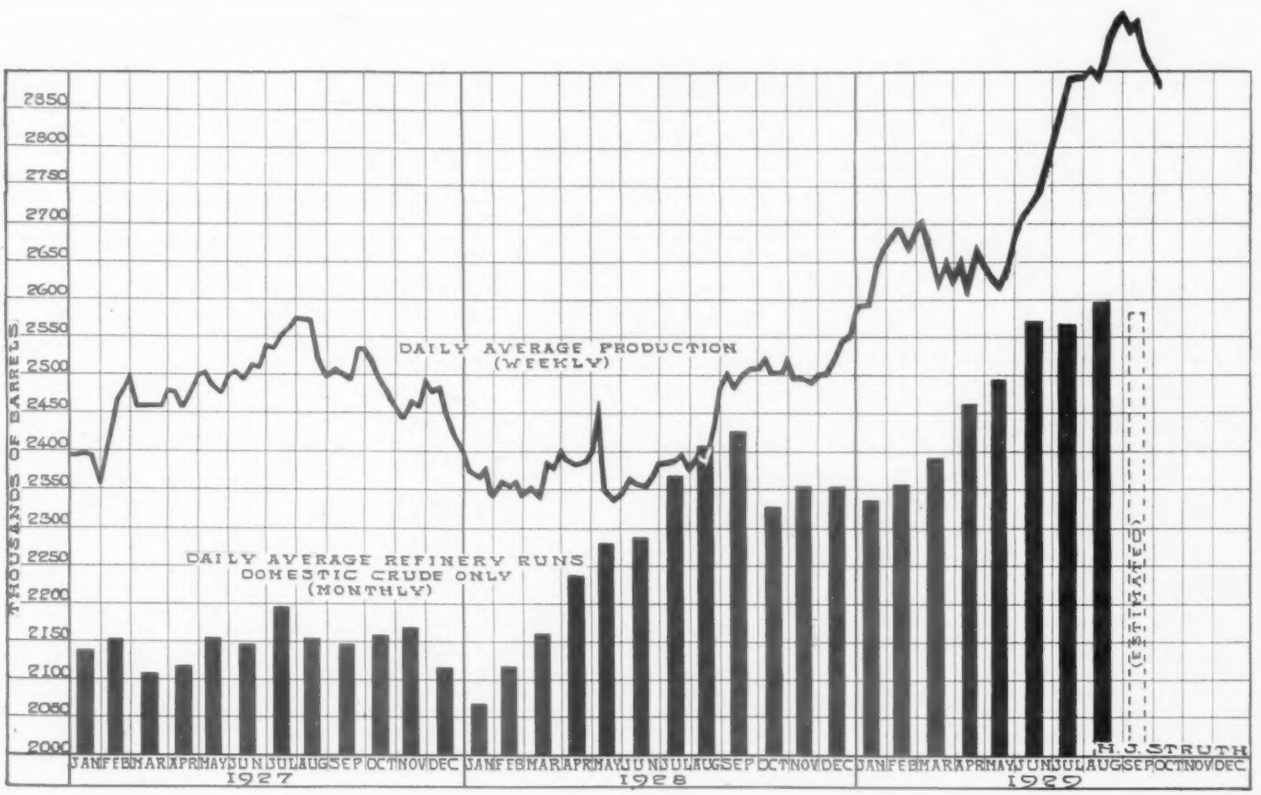
H. J. STRUTH, *Staff Economist, Houston, Texas*

Mid-Continent Crude Situation Further Improved

WHILE the general crude situation has been further strengthened by curtailment in the Mid-Continent area, the opposite effect of continued overproduction in California spells a lower crude market there. That posted prices of light crude in California will be reduced almost immediately, regardless of opinions to the contrary, is the indication based upon sound facts rather than opinion. No one can deny that California crude prices should have been reduced many weeks ago, but present conditions have reached the stage where such action is inescapable. Never before have stocks piled up at such rates as at present, and the prospect of slackening demand is expected to literally swamp the industry in California, since drilling continues unabated and foreshadows even greater gains in new supply. Unless the laws of supply and demand have ceased to function, prices of California crude must be reduced immediately.

A decidedly opposite situation exists in the Mid-Continent area, where further attempts to curtail production are meeting with a high degree of success. Last week, another favorable turn in the form of a 26,150-barrel decline in production of Earlsboro reduced Oklahoma and Kansas excess to only 565 barrels a day. In addition, Little River registered a decline of 2200 barrels daily, resulting in a net decline for the state of 29,400 barrels. The curtailment effort is now being extended to other sections of Oklahoma and is also reaching into Kansas, with the prospect that this movement will prove to be genuine and of far-reaching importance to the industry. At any rate, the immediate effect of the present curtailment effort throughout the Mid-Continent area has at least prevented a reduction in posted prices. If California had given the same serious thought to its overproduction problem, perhaps the effect would have completely stabilized the crude situation, to the extent that prices of both crude and refined oils could have been maintained at fairly high

DOMESTIC PRODUCTION AND REFINERY RUNS



Details on Critical Fields

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	Number Producing Wells	Daily Production Barrels	Daily Prod. Per Well	Rigs Up	Wells Drilling
WEST TEXAS:								
Hendrick	616	3,115,555	5,073	580	121,175	209[2]	2	4
Church & Fields	199	205,755	1,043	194	23,005	119	7	2
Gulf-McElroy	79	60,700	768	78	14,905	191	.	2
Yates	346	2,290,755	6,618	338	136,425	404[2]	.	17
TEXAS PANHANDLE:								
Gray County	488	340,380	697	463	78,390	169	8	79
CALIFORNIA:								
Santa Fe Springs[1]	367	1,254,100	3,417	205	256,500	1,251	26	230

[1]Includes deep zone production only. For field total add 220 wells and 28,000 bbls.
[2]Production partially pinched.

levels throughout the current year. As it is, the situation in California cannot fail to exert an unfavorable influence upon the whole industry, with the result that profits will dwindle during the last quarter of this year and perhaps through all of the first quarter of next year. This is a precarious state of affairs in view of otherwise highly favorable conditions that could have placed the industry in a healthy condition this year.

Production Declines

Declines in production in Oklahoma, Kansas and Texas, aggregating 36,250 barrels offset increases in all other sections by 13,350 barrels last week, bringing the total daily average production of the United States down to 2,887,050 barrels. Excess production over the daily average of last year now stands at 427,038 barrels for the country as a whole. Following are the outstanding production changes that took place last week in the leading fields:

District—	Daily Prod.	Increase or Decrease
Pecos County, Texas	132,100	*4,500
Winkler County, Texas	119,800	*1,550
Salt Flat, Texas	39,900	*2,200
Little River, Okla.	80,350	*2,200
Earlsboro, Okla.	77,000	*26,150
Sedgwick, Kansas	33,250	*3,100
Caddo, Light, La.	17,900	**4,700
Sulphur Dome, La.	8,900	**3,300
New Mexico	6,250	**2,800
Santa Fe Springs, Calif.	275,000	***
Ventura Avenue, Calif.	63,500	**2,000
Elwood, Calif.	24,800	**3,700

*Decrease. **Increase. ***No change.

Although no change was recorded at Santa Fe Springs, there was a sharp increase in production from the Lower Clarke zone which fully offset the effect of a natural decline in production of the upper producing zones. Next week, it is possible that further completions in wells now drilling to the Lower Clarke zone will result in a net increase for the field, while the immediate future undoubtedly spells a new peak for this field, unless something drastic is done to stem the tide of new production. Tideland drilling in the Elwood area is also becoming a most unfavorable factor that is contributing to the prospective slump in the California crude market.

The situation in Texas has not shown much change, with stocks of crude continuing to pile up, while production holds at a steady level. Whatever improvement has been recognized through declines in production in Gray County, Winkler County and Salt Flat, seems to become obscured when the potential of the Yates pool is considered, besides the possibilities of extending this area and the outlook for increased drilling activity in Coleman and Brown Counties. Apparently, internal conditions in a number of prolific producing areas of Texas are not in a very healthy condition at this time. It looks now as though Oklahoma stands alone in curtailment activities, with Texas on one side and California on the other looming menacingly upon the horizon. It is not difficult to see what might happen if prices are reduced in California, and possibly in West Texas. Competition that would follow could quickly force a general reduction in the Mid-Continent crude market that would wipe out the benefits of present curtailment effort in Oklahoma. However, even if Oklahoma prices were reduced through the forces of competition, it is a foregone conclusion that this state would be in a position to quickly recover its temporary losses through the otherwise favorable condition of its supply situation.

Only a most short-sighted view of the crude situation would fail to reveal the present unsatisfactory state of affairs. Aside from the improved statistical position of Oklahoma, the industry is certainly in a bad way. The effect of overproduction and a huge surplus supply is already being reflected in declining refined oil prices, and it would not be surprising to witness a general reduction in the crude market, which will in all probability be initiated in California at an early date. While the recent decline in Pennsylvania crudes was not considered an important factor in the general crude situation, it is

(Continued on page 190)

CRUDE RUNS TO STILLS, GASOLINE, AND GAS AND FUEL OIL STOCKS, WEEK ENDING OCTOBER 2, 1929

(Barrels of 42 Gallons)

Following are American Petroleum Institute figures showing refinery crude runs, gasoline stocks, and gas and fuel oil stocks, for the week ended October 2.

District	Percent Potential Capacity Reporting	Crude Runs to Stills	Percent Operated of Total Capacity Reporting	Gasoline Stocks	Gas and Fuel Oil Stocks
East Coast	100.0	3,336,900	84.0	4,279,000	8,922,000
Appalachian	90.5	596,400	81.4	837,000	750,000
Ind., Ill., Ky.	98.7	2,145,700	92.7	4,106,000	3,622,000
Okla., Kans., Mo.	89.5	1,980,100	74.1	2,358,000	4,306,000
Texas	90.4	4,269,400	91.8	3,743,000	12,895,000
Louisiana-Arkansas	96.7	1,391,100	81.6	1,735,000	5,343,000
Rocky Mountain	93.5	480,100	55.3	1,740,000	960,000
California	95.0	4,876,700	87.3	12,511,000	108,048,000
Total Week Sept. 28	94.4	19,076,400	84.8	31,309,000	144,846,000
Daily Average		2,725,200			
Total week Sept. 21	94.0	19,226,900	85.8	32,402,000	145,068,000
Daily Average		2,746,700			
Texas (Gulf Coast)	100.0	3,366,000	95.5	3,110,000	9,708,000
La. (Gulf Coast)	100.0	969,200	89.4	1,485,000	4,591,000

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1928	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
May	610,100	108,750	561,450	129,850	43,600	91,250	112,100	82,200	630,900	2,370,200	73,476,300
June	594,850	105,200	554,400	135,400	42,350	102,850	109,300	82,400	643,400	2,370,150	71,104,500
July	587,150	102,750	597,250	133,650	42,150	90,700	113,400	80,400	644,700	2,392,150	74,156,600
August	656,350	102,200	604,000	130,200	40,200	87,500	113,300	77,700	634,150	2,445,600	75,534,600
September	724,850	99,750	604,150	129,500	39,050	84,700	112,550	78,850	631,650	2,505,050	75,151,500
October	741,350	97,900	598,550	129,950	38,800	83,550	114,000	83,300	624,450	2,511,850	77,867,800
November	715,750	96,600	586,350	135,100	38,600	83,000	109,700	81,150	653,050	2,499,300	74,978,300
December	710,600	97,200	603,700	135,050	37,300	81,350	113,450	74,600	697,850	2,551,100	79,084,400
1929											
January	722,550	97,150	632,500	136,750	36,650	78,600	111,950	73,200	747,250	2,635,600	81,703,600
February	714,800	95,950	643,350	142,300	35,700	74,600	108,550	71,750	797,800	2,684,800	75,204,400
March	666,500	95,500	662,500	147,750	35,800	74,250	108,850	70,400	786,000	2,647,400	82,068,350
April	665,600	106,400	650,100	154,550	35,550	72,900	110,850	69,400	781,350	2,646,700	79,402,100
May	679,650	115,400	651,100	150,350	35,350	71,500	114,150	72,850	749,250	2,639,600	81,827,600
June	685,200	120,750	688,200	147,500	35,700	70,050	116,750	72,000	827,200	2,763,400	82,902,250
July	722,050	124,250	718,950	148,150	35,750	68,650	122,000	74,250	874,850	2,888,900	89,555,250
August	728,100	127,950	750,750	153,100	36,300	66,900	126,600	77,900	873,300	2,940,900	91,167,250
Sept. 7	735,400	129,600	761,450	159,150	35,550	66,000	135,000	80,000	854,200	2,956,350	20,694,450
Sept. 14	748,700	129,000	740,800	156,350	35,150	65,900	137,500	78,200	873,800	2,965,400	20,757,800
Sept. 21	698,600	128,850	734,350	156,350	36,700	64,700	137,500	76,950	890,500	2,924,500	20,471,500
Sept. 28	689,050	127,500	731,900	153,650	36,850	64,750	138,500	78,500	877,700	2,900,400	20,302,800
October 5	659,650	124,500	728,050	160,300	43,700	64,950	138,750	80,850	886,300	2,887,050	20,209,350
Increase	.....	.....	.....	6,650	6,850	200	250	2,350	8,600	.....	.....
Decrease	29,400	3,000	3,850	.....	.....	.....	.....	.....	.....	13,350	93,450

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Oct. 5	Sept. 28
Carson County	9,400	10,100
Gray County	78,450	78,500
Hutchinson County	26,800	25,100
Wheeler County	7,000	550
Others	950	800
Total	122,600	115,050

NORTH TEXAS

Archer County	18,850	19,050
Burkburnett	9,400	9,350
Electra	12,050	12,000
Iowa Park-KMA	4,900	5,000
Montague and Cooke Cos.	17,350	17,200
Wilbarger	31,450	31,500
Others	850	850
Total	94,850	94,950

WEST CENTRAL TEXAS

Brown County	9,350	9,600
Callahan County	3,550	3,600
Coleman County	7,950	8,450
Eastland-Desdemona	7,000	7,100
Jack County	3,800	3,900
Palo Pinto County	550	550
Shackleford County	10,150	10,400
Stephens County	6,500	6,500
Throckmorton County	650	650
Young County	6,650	6,900
Others	700	700
Total	56,850	58,350

WEST TEXAS

Crane-Upton Counties	46,500	46,950
Crockett County	2,300	2,250
Howard County	37,500	38,300
Jones County	3,800	2,900
Mitchell-Scurry Cos.	2,600	2,600
Pecos County	132,100	136,600
Reagan County	17,850	17,600
Winkler County	119,800	121,350
Others	2,700	2,900
Total	365,150	371,450

EAST CENTRAL TEXAS

Boggy Creek	3,150	3,450
Corsicana-Powell	6,750	7,050
Currie	400	400
Mexia	5,200	5,300
Nigger Creek	250	250
Richland	350	400
Wortham	1,050	1,050
Total	17,150	17,900

SOUTHWEST TEXAS

Dale	400	400
Laredo District	9,550	9,900
Luling	10,600	10,600
Lytton Springs	950	950
Somerset	1,700	1,700
Salt Flat	39,900	42,100
Refugio	7,050	7,400
Others	1,300	1,150
Total	71,450	74,200
T'tl Tex.(outside Gulf Coast)	728,050	731,900

TEXAS GULF COAST

Barbers Hill	19,150	19,300
Batson	1,350	1,300
Big Creek	4,750	4,650
Blue Ridge	2,400	2,300
Boling	1,400	1,400
Damon Mound	600	600
Goose Creek	5,500	5,500
Hull	9,450	8,250
Humble	6,700	6,100
Orange County	2,850	2,850
Pierce Junction	11,850	12,950
Raccoon Bend	8,350	8,850
Saratoga	1,050	1,050
Sour Lake	2,650	2,650
South Liberty	6,900	6,300
Spindle Top	23,050	22,450
Sugar Land	10,950	10,750
West Columbia	5,900	5,350
Washington Co.	2,100	2,100
Others	5,100	4,400
Total	132,100	129,150
Texas Total	860,150	861,050

OKLAHOMA

Asher	7,500	8,200
Carr City	10,650	11,450
Logan County	17,500	14,500
Braman	4,000	4,050
Blackwell	3,800	3,800
Hubbard	1,800	1,800
Thomas	800	800
Tonkawa	8,600	8,650
Garber	4,650	4,850
Burbank	18,150	18,150
Osage (outside Burbank)	26,000	26,000
Cushing	15,850	16,000
Yale Jenaings	6,500	6,550
Davenport	1,350	1,350
Bristow Slick	21,800	22,500
North Okmulgee	12,300	12,000
Lyons Deaner	8,000	8,400
Cromwell	7,800	7,800
Papoose	3,250	3,150
Wewoka	4,350	4,300
Seminole	32,200	32,200
East Seminole	7,950	8,550
Bowlegs	31,300	31,950
Searight	10,950	11,100
Little River	80,350	82,550
Earlsboro	77,000	103,150
Duncan District	7,950	7,950
Graham	4,000	4,050
Fox	1,350	1,300
Healdton	12,550	12,550
Hewitt	7,750	7,750
Scholem Alechem	12,800	12,800
Pearson	1,050	1,050
St. Louis	61,000	62,500
Allen	24,550	24,450
Maud	10,850	10,400
Mission	23,250	24,050
Oklahoma City	1,000	950
Sasakwa	12,700	10,450
Others	54,450	55,000
Total	659,650	689,050

CALIFORNIA

Santa Fe Springs	275,000	275,000
Long Beach	172,000	172,000
Huntington Beach	43,500	43,500
Torrance	*	12,500
Dominguez	9,000	9,000
Rosecrans	*	7,000
Inglewood	23,500	23,500
Midway-Sunset	70,000	70,000
Ventura Avenue	63,500	61,500
Seal Beach	41,000	41,000
Elwood-Goleta	24,800	20,100
Kettleman Hills	10,500	10,500
Others	153,500	132,100
Total	886,300	877,700

*Included with "Others."

KANSAS

Greenwood County	20,400	20,500
Florence-Covert	950	950
Peabody-Ebling	3,250	3,300
Eldorado-Towanda	13,050	13,000
Augusta-Fox Bush	2,950	2,950
Rainbow Bend	1,050	1,050
Russell	3,100	3,100
Churchill	6,500	6,900
Oxford	4,000	3,900
Sedgwick	33,250	36,350
Others	36,000	33,500
Total	124,500	127,500

NORTH LOUISIANA

	Oct. 5	Sept. 28
Homer	3,800	3,800
Haynesville	4,900	4,900
Caddo Light	17,900	13,200
Caddo Heavy	3,200	3,350
DeSoto-Red River	3,200	3,150
Elm Grove	550	550
Bellevue	700	650
Cotton Valley	2,500	2,300
Urania	5,600	5,600
Pleasant Hill	1,000	1,000
Others	350	350
Total North Louisiana	43,700	38,850

LOUISIANA GULF COAST

Bayou Boullion	100	100
East Hackberry	2,050	2,500
Hackberry	3,250	2,850
Edgerly	750	750
Evangeline	2,000	2,100
Lockport	4,300	4,300
Sorrento	150	150
Sulphur Dome	8,900	5,600
Vinton	4,300	4,350
Others	2,400	1,800
Total Louisiana Gulf Coast	28,200	24,500
Louisiana Total	71,900	63,350

ARKANSAS

El Dorado	4,500	4,550
Champagnolle	5,600	5,450
Smackover Light	5,800	5,800
Smackover Heavy	45,700	45,600
Stephens	1,000	1,000
Nevada	1,000	1,000
Lisbon	1,250	1,250
Others	100	100
Total	64,950	64,750

MOUNTAIN STATES

WYOMING

Salt Creek	34,300	34,250
Grass Creek	2,250	2,100
Elk Basin	650	900
Big Muddy	2,200	2,250
Lost Soldier	3,500	4,000
Rock River	2,300	2,200
Lance Creek	200	2,350
Oregon Basin	5,300	5,200
La Barge	2,250	200
Others	4,350	4,300
Total	57,300	57,750

MONTANA

Cat Creek	1,300	1,350
Sunburst	6,900	6,900
Pondera	2,700	2,750
Others	50	50
Total	10,950	11,050

COLORADO

Moffats (Craig)	1,250	1,200
Fort Collins	2,000	2,050
Florence	900	800
Others	2,200	2,200
Total	6,350	6,200

NEW MEXICO

Table Mesa	100	100
Artesia	850	850
Hogback	400	400
Rattlesnake	1,750	1,700
Lea & Eddy Co.	2,750	...
Others	400	400
Total	6,250	3,450
Total Mountain States	80,850	78,500

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va. Pa., Ky., N. Y. & Mich.	138,750	138,500

PRODUCTION SUMMARY

East of Rockies	1,919,900	1,944,200
Total U. S.	2,887,050	2,900,400

CRUDE OIL PRICE QUOTATIONS

Revised October 8, 1929

EASTERN STATES

(Effective October 1, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penn Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penn Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penn Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.65
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.80
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines	1.90
Somerset Oil in Cumberland Pipe Line lines (Kentucky)	1.80
Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (Effective Jan. 29, 1929)	60
Keister (Pennsylvania)	1.20

CENTRAL STATES

(Effective May 21, 1929)

Posted by Ohio Oil Co.

Illinois	1.75
Indiana	1.57
Lima	1.80
Plymouth	1.28
Princeton	1.75
Waterloo	1.35
Wooster	1.90

WESTERN KENTUCKY

All grades	1.68

MID-CONTINENT

(Effective May 21, 1929)

Magnolia Petroleum Company

Under 26	.70
26 to 26.9 gravity	.75
27 to 27.9 gravity	.85
28 to 28.9 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.05
31 to 31.9 gravity	1.15
32 to 32.9 gravity	1.25

From 33 to 44 gravity and above, Magnolia Petroleum Company prices are the same as those of Carter Oil Company.

MID-CONTINENT

(Effective May 20, 1929)

Carter Oil Company, Gulf Pipe Line Company, Sinclair Pipe Line Company, Prairie Oil and Gas Company and The Texas Company

25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

PANHANDLE

(Effective May 20, 1929)

GRAY COUNTY

(Humble Oil & Refining Company, Magnolia Petroleum Company, Gulf Pipe Line Company

Below 29 gravity	.90
29 to 29.9 gravity	.95
30 to 30.9 gravity	1.00
31 to 31.9 gravity	1.05
32 to 32.9 gravity	1.10
33 to 33.9 gravity	1.15
34 to 34.9 gravity	1.20
35 to 35.9 gravity	1.25
36 to 36.9 gravity	1.30
37 to 37.9 gravity	1.35
38 to 38.9 gravity	1.40
39 to 39.9 gravity	1.45
40 to 40.9 gravity	1.50
41 to 41.9 gravity	1.55
42 to 42.9 gravity	1.60
43 to 43.9 gravity	1.65
44 and above	1.70

WHEELER COUNTY

(Humble Oil and Refining Company and Magnolia Petroleum Company)

Below 30 gravity	.90
30 to 30.9 gravity	.95
31 to 31.9 gravity	1.00
32 to 32.9 gravity	1.05
33 to 33.9 gravity	1.10
34 to 34.9 gravity	1.15
35 to 35.9 gravity	1.20
36 to 36.9 gravity	1.25
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.35
39 to 39.9 gravity	1.40
40 to 40.9 gravity	1.45
41 to 41.9 gravity	1.50
42 to 42.9 gravity	1.55
43 to 43.9 gravity	1.60
44 and above	1.65

CARSON-HUTCHINSON COUNTIES

(Humble Oil and Refining Company, Magnolia Petroleum Company and Gulf Pipe Line Company)

Below 32 gravity	.90
32 to 32.9 gravity	.95
33 to 33.9 gravity	1.00
34 to 34.9 gravity	1.05
35 to 35.9 gravity	1.10
36 to 36.9 gravity	1.15
37 to 37.9 gravity	1.20
38 to 38.9 gravity	1.25
39 to 39.9 gravity	1.30
40 to 40.9 gravity	1.35
41 to 41.9 gravity	1.40
42 to 42.9 gravity	1.45
43 to 43.9 gravity	1.50
44 and above	1.55

SOMERSET

Grayburg

Below 33 gravity	1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

CALIFORNIA CRUDE OIL PRICES AT THE WELL

(EFFECTIVE JANUARY 18, 1929)

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity	Ventura*	Signal Hill	Alamitos Heights-Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Elwood† Terrace	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway-Sunset Elks Hills	Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge
14-14-9	$ .85	$ .70	$ .70	$ .70	$ .70	$ .70	$ ..	$ ..	$ .70	$ .70	$ .70	$ .70	$ .70	..	$ .50	$ .50	$ .50	$ .50	$ .50	$ .50
15-15-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
16-16-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
17-17-9	.85	.70	.70	.70	.70	.70	..	..	.70	.70	.70	.70	.70	..	.50	.50	.50	.50	.50	.50
18-18-9	.85	.75	.75	.75	.75	.75	..	..	.75	.75	.75	.70	.75	..	.50	.56	.56	.56	.56	.56
19-19-9	.85	.80	.80	.80	.80	.80	..	..	.80	.80	.80	.75	.80	..	.50	.62	.62	.62	.62	.62
20-20-9	.85	.85	.85	.85	.85	.85	..	..	.85	.85	.84	.80	.84	..	..	.68	.68	.68	.68	.68
21-21-9	.86	.89	.89	.89	.89	.89	..	..	.89	.89	.88	.85	.88	.89	..	.74	.74	.74	.74	.74
22-22-9	.87	.93	.93	.93	.93	.93	..	..	.93	.93	.91	.90	.91	.92	..	.80	.80	.80	.80	80
23-23-9	.90	.97	.97	.97	.97	.97	..	..	.97	.97	..	.95	.94	.95	..	.85	.85	.85	.85	.85
24-24-9	.94	1.01	1.01	1.01	1.01	1.01	1.01	..	1.01	1.01	..	.98	.97	.98	..	.90	.90	.90	.88	.88
25-25-9	.98	1.05	1.05	1.05	1.05	1.05	1.05	..	1.05	1.05	..	1.01	1.00	1.01	..	.95	.95	.95	.91	.91
26-26-9	1.02	1.09	1.09	1.09	1.09	1.09	1.09	..	1.09	1.09	..	1.04	1.04	1.04	..	1.00	1.00	1.00	.94	.94
27-27-9	1.06	1.13	1.13	1.13	1.13	1.13	1.13	..	1.13	1.13	..	1.07	1.08	1.07	..	1.05	1.05	1.05	.98	.97
28-28-9	1.10	1.17	1.17	1.17	1.17	1.17	1.17	..	1.17	1.17	..	1.10	1.12	1.10	..	1.10	1.10	1.10	1.02	..
29-29-9	1.14	1.21	1.21	1.21	..	1.21	1.21	..	..	1.21	..	1.13	1.16	1.15	..	1.16	1.16	1.16	1.06	..
30-30-9	1.18	1.25	1.25	1.25	..	1.25	1.25	..	..	1.25	..	1.16	1.20	1.20	..	1.22	1.22	1.22	1.10	..
31-31-9	1.23	1.30	1.30	1.30	..	..	1.30	..	..	..	..	..	..	1.25	..	1.28	1.28	1.28	1.14	..
32-32-0	1.28	1.35	1.35	1.35	..	..	1.35	..	..	..	..	..	..	1.30	..	1.34	1.34	1.34	1.18	..
32-32-9	..	..	..	..	..	..	1.41	..	..	..	..	..	..	1.35	..	1.40	1.40	1.40	1.22	..
34-34-9	..	..	..	..	..	..	1.47	1.16	..	..	..	..	..	1.40	..	..	..	1.46	1.26	..
35-35-9	..	..	..	..	..	..	1.53	1.22	..	..	..	..	..	1.45	..	..	..	..	1.30	..
36-36-9	..	..	..	..	..	..	1.59	1.28	..	..	..	..	..	1.50	..	..	..	..	..	..
37-37-9	..	..	..	..	..	..	1.65	1.34	..	..	..	..	..	1.55	..	..	..	..	..	..
38-38-9	..	..	..	..	..	..	1.71	1.40	..	..	..	..	..	1.60	..	..	..	..	..	..
39-39-9	..	..	..	..	..	..	1.77	1.46	..	..	..	..	..	1.65	..	..	..	..	..	..
40-40-9	..	..	..	..	..	..	1.83	1.52	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	..	1.89	1.58	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	..	1.95	1.64	..	..	..	..	..	..	..	..	..	..	..	..

KETTLEMAN HILLS—55 degrees Gravity and above $1.65 per barrel. *Union Oil Company. †Changed March 18, 1929.

(See Page 188)

NATIONAL ADVERTISING

makes NEW NEIGHBORS *feel* FRIENDLY *toward you*

It's a great feeling . . . when you're traveling in a foreign country where nobody knows you or talks your language, to meet an old familiar face from the old home town!

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CRUDE OIL PRICE QUOTATIONS (*Continued from Page 186*)

WEST TEXAS
(Humble, Gulf, Magnolia, The Marland Company and Southern Crude Oil Purchasing Company)*

Crane-Upton, Crockett, Howard, Pecos and Winkler Counties and Lea County, N. Mex.

Below 25 gravity	.70
25 to 25.9 gravity	.74
26 to 26.9 gravity	.78
27 to 27.9 gravity	.82
28 to 28.9 gravity	.86
29 to 29.9 gravity	.90
30 to 30.9 gravity	.94
31 to 31.9 gravity	.98
32 to 32.9 gravity	1.02
33 to 33.9 gravity	1.06
34 to 34.9 gravity	1.10
35 to 35.9 gravity	1.14
36 and above	1.18

*Gulf does not post in Winkler County; Magnolia posts in Crane, Upton and Winkler Counties. Southern Crude Oil Purchasing Company posts only in Crane, Upton and Winkler Counties.

MARKHAM
The Texas Company
(Effective May 20, 1929)

All grades	$1.00

LULING

All grades	.90

NORTH AND CENTRAL TEXAS
(Effective May 21, 1929)
Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs Crude
(Humble Oil and Refining Company)

Below 25	.85
25 to 25.9 gravity	.90
26 to 26.9 gravity	.95
27 to 27.9 gravity	1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 and above	1.85

SOUTH TEXAS

Mirando	.90
Salt Flat	1.25

GULF COAST
(Effective May 21, 1929)

Grade "A" all companies	1.30
Gulf Coast Light Oil, below 25	1.15
25 to 25.9 gravity	1.18
26 to 26.9 gravity	1.21
27 to 27.9 gravity	1.24
28 to 28.9 gravity	1.27
29 to 29.9 gravity	1.30
30 to 30.9 gravity	1.33
31 to 31.9 gravity	1.36
32 to 32.9 gravity	1.39
33 to 33.9 gravity	1.42
34 to 34.9 gravity	1.45
35 to 35.9 gravity	1.48
36 to 36.9 gravity	1.51
37 to 37.9 gravity	1.54
38 to 38.9 gravity	1.57
39 to 39.9 gravity	1.60
40 and above	1.63

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 to $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

WYOMING-MONTANA
(Effective May 21, 1929)
Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	1.65
Grass Creek	1.65
Rock Creek	1.40
Lost Soldier	1.05
Lance Creek	1.68
Mule Creek	1.20
Notches	.65
Big Muddy	1.43
Osage	1.65
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.65
Lander	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek
Midwest Refining Company

29 to 29.9 gravity	.90
30 to 30.9 gravity	.96
31 to 31.9 gravity	1.02
32 to 32.9 gravity	1.08
33 to 33.9 gravity	1.11
34 to 34.9 gravity	1.14
35 to 35.9 gravity	1.17
36 to 36.9 gravity	1.20
37 and above	1.23

MONTANA
(Effective May 24)

Sunburst	$1.75
Cat Creek	1.48
Lake Basin	2.20

NEW MEXICO

Artesia	1.08
Hogback	1.43

CANADA
(Effective May 21, 1929)

Oil Springs	2.27
Petrolia	2.20

LOUISIANA-ARKANSAS
(Effective May 22, 1929)
Homer, Haynesville, Caddo, El Dorado, De Soto and Crichton and Cotton Valley*
(Atlantic Oil Producing Company, Standard of Louisiana, Magnolia Petroleum Company and The Texas Company.)

27 to 27.9 gravity	$1.00
28 to 28.9 gravity	1.05
29 to 29.9 gravity	1.10
30 to 30.9 gravity	1.15
31 to 31.9 gravity	1.20
32 to 32.9 gravity	1.25
33 to 33.9 gravity	1.30
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.40
36 to 36.9 gravity	1.45
37 to 37.9 gravity	1.50
38 to 38.9 gravity	1.55
39 to 39.9 gravity	1.60
40 to 40.9 gravity	1.65
41 to 41.9 gravity	1.70
42 to 42.9 gravity	1.75
43 to 43.9 gravity	1.80
44 gravity and above	1.85

*Shreveport-Eldorado's postings stop at above 40 gravity.

The posting on Cotton Valley is same as Caddo. From 36 to 52 and above the regular gravity schedule is followed.

The Texas Company pays North Texas gravity scale in North Louisiana.

STEPHENS
(All Companies)

Below 28 gravity	.90
28 to 28.9 gravity	.94
29 to 29.9 gravity	.98
30 to 30.9 gravity	1.02
31 to 31.9 gravity	1.06
32 gravity and above	1.10

SMACKOVER
(All Companies)

Below 24 gravity	.85
24 and above	1.00
Bellevue	1.30
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	1.00
Calion	.75

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS
(Barrels of 42 gallons)

	Week Ended Sept. 28	Week Ended Sept. 21
AT ATLANTIC COAST PORTS—		
Baltimore	218,000	64,000
Boston	73,000	*167,000
New York	957,000	946,000
Philadelphia	270,000	351,000
Others	230,000	92,000
Total	1,748,000	1,620,000
Daily Average	249,714	231,428
AT GULF COAST PORTS—		
Galveston District	.....	55,000
New Orleans and Baton Rouge	15,000	*255,000
Port Arthur and Sabine District	160,000	.....
Tampa	.....	.....
Total	175,000	310,000
Daily Average	25,000	44,286
AT ALL UNITED STATES PORTS—		
Total	1,923,000	1,930,000
Daily Average	274,714	275,714
Daily Average Four Weeks Ended	284,929	286,214

CALIFORNIA OIL RECEIPTS AT ATLANTIC AND GULF COAST PORTS
(Barrels of 42 gallons)

	Week Ended Sept. 28	Week Ended Sept. 21
AT ATLANTIC COAST PORTS—		
Baltimore	109,000	303,000
Boston	.....	.....
New York	62,000	213,000
Philadelphia	108,000	189,000
Others	113,000	.....
Total	392,000	705,000
Daily Average	56,000	100,714
AT GULF COAST PORTS—		
Total	.....	.....
Daily Average	.....	.....
AT ATLANTIC AND GULF COAST PORTS—		
Total	392,000	705,000
Daily Average	56,000	100,714
Daily Average Four Weeks Ended	64,643	76,571
Distribution of Total California Oil Receipts is as follows:		
Gasoline	217,000	690,000
Gas Oil	137,000	.....
Kerosene Distillate	38,000	15,000
Total	392,000	705,000

*—Revised.

PERSONAL MENTION-MEN YOU KNOW

Garrett Donnelly, vice-president of the Eastland Oil Company, Fort Worth; Roy A. Westbrook, Fort Worth oil operator; and Pete Woodruff, retired capitalist of Shreveport, departed late last week for Chicago to take in the World Series.

Mr. and Mrs. P. H. Bohart have returned to Tampico, Mexico, after spending their vacation in Colorado and in Houston and Beaumont, Texas. Mr. Bohart is general agent of the Mexican Gulf Oil Company.

M. H. Diaz, general attorney, Mexican Gulf Oil Company, with headquarters in Tampico, recently visited his mother, Mrs. M. Diaz, in Houston. He formerly practiced law in Houston.

Mr. and Mrs. John E. Meyer are the parents of an infant son, John Stanton Meyer, born on September 30, 1929, at Scott & White hospital, Temple, Texas. Mr. Meyer is a land and lease man for Humble Oil & Refining Company's Brenham district, Brenham, Texas.

H. K. V. Tompkins, assistant to the vice-president, Gulf Companies, Houston, is in Niagara Falls, New York, on a brief trip.

D. S. Scott of the executive department, Gulf Companies, Houston, has returned from a trip to New York, Washington, Boston and Philadelphia.

Robert A. Young, Rocky Mountain district manager for the Marion Machine, Foundry & Supply Company, has been transferred to New York as department manager of exports for the company.

W. H. Perritt, in charge of the Monroe, Louisiana, office of the minerals division of the Louisiana Conservation Commission, has resigned his post to accept a position with an oil company in the North Louisiana territory. His successor has not been selected. Perritt had been with the commission for several years.

A. R. Steirly, formerly with the Mission Sales Company, has recently gone into business for himself. He has formed the Arsco, Inc., and established offices at Leona and Carr Streets, Houston. Arsco, Inc. manufactures and distributes a line of drilling and pumping specialties. Steirly has been in the oil field equipment business, manufacturing and selling, for the past 20 years, and has spent most of this time in the Gulf Coast country.

W. G. GUISS
of Tulsa, secretary and treasurer of McMan Oil & Gas Company

Glenn Skinner of Tulsa, secretary-treasurer of Black, Sivalls and Bryson, Inc., is on an extensive hunting trip in Nova Scotia, Canada. In the hunting party are Ralph Feagles, Dr. Bower of Fort Wayne, Indiana, and the Hon. Edward Jackson, ex-governor of Indiana.

O. W. Moore, who has been located at Orange, Texas, has been appointed manager of a new store opened at Luling, Texas, by the National Supply Company. The new store will carry complete stocks for supplying the several fields being developed in the Luling area.

Board Names Three New A. P. I. Directors

Directors of the American Petroleum Institute, in session at Tulsa, October 4, elected three men to fill places vacant because of resignations and death. Edgar J. Marston of the Texas Pacific Coal & Oil ompany, Fort Worth, was elected to the place left vacant because of the resignation of D. E. Buchanan. F. A. Leovy of the Gulf Oil Corporation was elected to the place left vacant because of the resignation of George S. Davison, who retired recently as president of the Gulf Refining Company. George R. Nutty, also of the Gulf organization, Pittsburgh, was elected a director to fill the place left vacant through the death of Edward Prizer, chairman of the board of the Vacuum Oil Company.

The A. P. I. directors met at Tulsa to pass on activities of the committee of interpretations on the Code of Business Practices and to transact other routine business. These sessions were held October 3 and 4, giving the directors opportunity for remaining in Tulsa for the International Petroleum Exposition and Congress.

Herman Keck, manager of the Butler, Pennsylvania, works of Kesselman & Company, sailed from New York via the Conte Bianca Mano, on October 5, for Naples, Italy, from which point he will travel through Italy, Switzerland, Germany, France and England. Mr. Keck will be accompanied by his wife. They will embark for home November 23, sailing from Liverpool.

Trell Yocum, former director of public relations of the American Petroleum Institute, and for the past year managing director of the American Oil Burner Association and Oil Heating Institute, has tendered his resignation to the latter organization. His future plans were not announced in his letter of resignation.

Charles Girten, president of the Girten Belting and Supply Company, 511 Washington Avenue, Houston, spent the last week of September in New Orleans on business.

Mid-Continent Crude Situation Further Improved
(Continued from page 184)

nevertheless one of the signs of economic functioning to alleviate the distressed condition of the oil market.

Oklahoma Curtailment Plans

A late news flash states that Oklahoma oil men have definitely voted upon a plan to curtail production throughout the balance of this year. According to the plan, state output will be prorated on the basis of a total daily production of 660,000 barrels. The potential of the state has been estimated at 800,000 barrels. The plan includes a 20 per cent. reduction in Logan County, Greater Seminole, Allen Dome, Sasakwa and St. Louis, to be in effect until October 31. A further reduction of 40 per cent. is to be made during November and 50 per cent. during December. This places Oklahoma in an enviable position. Undoubtedly, this unanimous action will arouse the industry in California and Texas to adopt a similar plan of proration. However, it is not believed that any action will be taken in California until a drastic reduction in crude prices is announced. Perhaps this is the only thing that will bring California operators into line with the progressive movement to stabilize conditions in the industry.

While a large group of operators are attempting to find a way of meeting provisions of the gas saving law and another group is trying to find a means of avoiding the statute, overproduction continues in California and no large drop in the state total looms in the immediate future. Several conferences have been held and arguments on both sides heard, but an analysis of what has been accomplished in getting the independents and majors together shows the situation as a whole to be a mess.

The state has worried along with the operators and has been lenient in almost every respect. It recognized the rights of the operators to agree among themselves, but the latter have been unable to organize to combat gas waste. Many of the smaller operators are directly opposed to the statute and certainly will not reduce production to save gas unless they are forced into it. These same companies are declaring the law unconstitutional and unfair to operators involved.

Santa Fe Springs is still the chief source of worry and the field probably will not show an appreciable decline for several months unless something is done to halt drilling. About 150 wells are drilling for the Clarke zone and it is believed that peak production in this sand will pass 150,000 barrels per day. Certainly the combined production of the other zones will not fall below 150,000 barrels in the meantime. Present production continues around 275,000 barrels.

State enforcement officers are attempting to stop gas waste at Ventura and stand a better chance than in the Los Angeles basin fields. If these efforts are successful, production will drop at least 15,000 barrels.

Gasoline and fuel oil are slightly weaker, with the former moving on export shipments as low as six cents. The average price is higher, however. Fuel oil has sold as low as 45 cents, f.o.b. San Pedro, but the bulk of this commodity is moving at higher prices.

With a good demand prevailing for all grades of burning oils, the plant owners in the up-state refining centers of Texas are finding gasoline a burdensome product on their hands. U. S. Motor gasoline is available in large quantities at 6½ to 6¾ cents per gallon, and comparatively few takers. On the other hand fuel oil, gas oil, distillates and kerosene are more popular with the trade, and are being counted on by the plant owners to be the money product for the next few months in the Wichita Falls district.

Crude market congestion in the Texas Panhandle is showing a steady improvement as the flush yield from Gray County drops off each week. This condition has curtailed offers of distress priced oil for tank car movement over Pampa racks, and has lessened the possibilities of a local crude price cut being initiated by the major companies.

Crude purchasing agencies in the West Texas district are showing little interest in booking new connections. Humble Oil & Refining Company has been the most active in surrendering outside oil. This company discontinued its purchase of 5000 barrels of Winkler crude from Gulf Production Company late in September, but Atlantic Pipe Line Company has taken over this connection.

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH AVERAGE OF 1928

	Daily Av'ge Year 1928 (Bureau of Mines Data)	Daily Av'ge October 5, 1929 (A. P. I. Wkly Prod. Rept.)	Excess
Oklahoma-Kansas	786,585	787,150	565
Texas-Louisiana-Arkansas	849,205	997,000	147,795
California	633,831	886,300	252,469
Balance of United States	190,391	216,600	26,209
Total United States	2,460,012	2,887,050	427,038
Mexico-Central and South America	561,339	609,249*	47,910
Grand Total	3,021,351	3,496,299	474,948

*As of March 30, 1929—latest date available.

Mexican Oil Production Shows Further Decline

Mexico City, Mexico.—According to the report of the Mexican Secretary of Industry, Commerce and Labor, Mexican oil fields had produced a total of 1,515,199,049 barrels from 1901 to the end of last year. Production for the first six months of this year totaled 21,419,406 barrels, against 22,306,007 barrels in the same period of last year. Exports of crude and refined oils in the first six months of this year amounted to 16,679,891 barrels, compared with 23,990,700 barrels in the first half of last year. Total exports during 1928 were 33,262,168 barrels.

Since 1921, the decline of oil production in Mexico has been rapid, with decreases of millions of barrels each year. Last year's production was 143,246,977 barrels less than the yield of 1921. The following table shows the annual production in barrels from 1901 to 1928, inclusive:

Year	Production	Year	Production
1901	10,345	1916	40,545,712
1902	40,200	1917	55,292,770
1903	75,375	1918	63,828,326
1904	125,625	1919	87,072,954
1905	251,250	1920	157,068,678
1906	502,500	1921	193,397,587
1907	1,005,000	1922	182,278,457
1908	3,932,900	1923	149,584,856
1909	2,713,500	1924	139,678,294
1910	3,634,080	1925	115,514,700
1911	12,552,798	1926	90,420,973
1912	16,558,215	1927	64,121,142
1913	25,696,291	1928	50,150,610
1914	26,235,403		
1915	32,910,508	Total	1,515,199,049

Logan County Operator Buys Steel Storage

Tulsa, Oklahoma.—J. S. Cosden, Inc., operating subsidiary of the Cosden Oil Company in Oklahoma, has placed an order for three 80,000-barrel steel tanks with the Chicago Bridge & Iron Works for immediate erection on the Gardner lease, Marshall field, Logan County. These tanks are to be equipped with breather roofs, and were made necessary because of limitations placed on crude purchases by buyers connected to the field. J. S. Cosden, Inc., has one well producing 3500 barrels of high gravity oil daily, and three more tests underway. Headquarters of the company are in the Electric building, Fort Worth.

Mallard Bay

Houston.—Shell Petroleum Corporation's Marceaux 1, wildcat test on a seismograph prospect in Section 32-12s-3w, Cameron Parish, Louisiana, is drilling sandy shale at 1380 feet. This test is on what is called the Mallard Bay prospect, and is the first drilling following the geophysical work.

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Oklahoma-Kansas Field Notes

WARREN BAKER, *Staff Representative, Tulsa, Oklahoma*

Failures Reverse Ideas on Size of Oklahoma City Area

TULSA.—Despite the completion of what is perhaps the largest well drilled in in the Oklahoma City field, operators were primarily interested in the growing number of disappointments in the region.

Hopes arose with the finding of sand production on the flank of the structure that the producing area might spread to the east and west further than first anticipated have been practically dispelled. Recent developments indicate that the producing area of the pool will be an egg shape, running northwest by southeast. Apparently the sand zone will not cover a large area on the east and west sides. Others are of the opinion that the district may prove erratic and that the present disappointments will mean little.

At any rate the west side of the pool, at least along the southwest edge, apparently is near at hand. Foremost among the wells to hurt materially the prospects of the pool to the southwest has been the Indian Territory Illuminating Oil Company and Foster Petroleum Company's Foster 1, C NE SW Section 24-11-3w. Another disappointment has been the failure of the Indian Territory Illuminating Oil Company, Foster Petroleum Company and Cromwell-Franklin Oil Company's Bertha Johnson well to come back after setting the sand screen in the bottom of the hole.

Search for Eastern Limits

The past week the Indian Territory Illuminating Oil Company and Foster Petroleum Company's Watters 1, NE NW NE Section 25-11-3w, drilled out the plugs and bailed down. The hole filled up with 5300 feet of fluid, of which 5000 feet was oil. After several days of continuous bailing it offers little encouragement. This was originally a gasoline well.

Operators are also showing that they believe the east side of the pool may soon be found by their tendency to make locations only close in to production in that direction. Several wells drilling in this direction are running low, including the Prairie Oil & Gas Company and T. B. Slick's Hiddleston 2, SEc Section 19-11-2w, which is drilling ahead below 6500 feet, after topping the Oswego lime at 6380 feet, which is low in comparison with nearby wells.

Present indications are that the Oklahoma City producing area will not extend far to the west, east and south from its present limits, and probably not to the north, although there is still some room for extensions to the northwest, north, and northeast, that may prove highly productive. However, there are many proven and undrilled locations within the field's present boundaries. However, unless other major extensions are made, and the conservation program is not continued, which is very unlikely, the field may not play the important part in the state's producing output as heretofore estimated.

Slick Gets Big Well

T. B. Slick's Glidden 1, SWc SE Section 13-11-3w, in the Oklahoma City field, is probably the largest well to be completed in that district. For the first several hours the hourly output of the well was over 900 barrels, which exceeds all existing records. The first 10 minutes it made 180 barrels, 580 barrels the next half hour, and 945 barrels the first hour. The second hour it fell off to 845 barrels, but recovered 950 barrels the third hour. It is aided by a flow of 30,000,000 feet of gas. It is now shut in for 30 days in accordance with the shut down program.

The crew commenced bailing about daylight. After lowering the fluid to about 1200 feet the pressure commenced to cause the fluid column to rise. It soon blew itself in. After cleaning itself, it was turned into the tanks.

The wildcat of the Magnolia Petroleum Company on the Noble farm, in the NW SW SW Section 30-12-2w, encountered a hole full of salt water while bailing down. It had a good show of oil and an excellent one of gas at 6362 feet, but the water killed the show. After several days of testing the source of the water it was found at 2890 feet, where holes had been worn in the casing. Cement has been pumped in the hole and it is shut down while waiting on this to set.

Salt water has showed up on the T. B. Slick's Martin 1, NWc Section 13-13-1w, a wildcat near Jones. Rotary tools have been moved in so the caving and water can be overcome when drilling is resumed at 5640 feet.

Mid-Kansas Oil & Gas Company's Browning 1, SW NW Section 18-11-2w, on the northeast corner of the field, has succeeded in shutting off the gas and is ready to drill deeper.

Coline Oil Company continues to be unable to get its Olds 2, C NE NW Section 24-11-3w, under control. It is estimated blowing 55,000,000 feet of gas into the air daily.

Several wells are ready to drill into the producing horizon during the next week, some of which will have important bearings on the future of the pool.

Second Well Completed in the Voshell Area

WICHITA, Kansas. — Although considered a producing area for the past six months, it was not until the past week that the first producer was completed in the Voshell area, south of McPherson County. One-half mile south of the Voshell 1, of Ted Washabaugh, which was never able to complete, the Derby Oil Company's Stuckel 1, NEc SE Section 9-21-3w, came in last week, and yielded 835 barrels the first 20 hours from the Wilcox sand at 3322-25 feet.

The six-inch casing was set at 3281 feet and the eight-inch casing at 3003 feet. A chat containing gas was encountered between the two casing points, and it is thought that this gas is causing the well to flow. The well produced 115 barrels the first two hours, and later was doing 40 barrels per hour of better than 40 gravity oil. The oil column stands within 200 feet of the top of the hole and does not seem to be lowered by the flowing.

Ted Washabaugh's Voshell 1, NW NE NE Section 9-21-3w, which showed for a well in the Viola lime at 3301 feet, but which finally had to be abandoned without a complete test, and Washabaugh's block was taken over sometime ago by W. C. McBride, Inc., of St. Louis, who is now drilling Voshell 2, in the SE NE NE Section 9-21-3w.

Rice County

Tom B. Slick and Pryor & Lockhart are ready to ascertain the thickness of the producing horizon and the sand condition in their Schurr 1, discovery well of the Schurr field. This well has been making crude from an unidentified

sand at 3277 feet that tests nearly 55 gravity.

Producers & Refiners Corporation have staked a location in the SEc NW Section 21-20-10, north of the above wildcat producer. It will be the first test drilled in the territory since the drilling in of the original well.

In the Ritz district of McPherson County, the third well is overdue. It is Texas Company's Munn 1, diagonal offset to the Shell Petroleum Company's Ritz 2, recently completed. The Texas Company's well is pinched in waiting on pipe line connections and tankage. It is making 2,500,000 feet of gas and a barrel of oil per hour. Both of the Shell Petroleum Corporation's wells are pinched. Ritz 1, is producing about 1100 barrels per day and No. 2, 65 barrels hourly.

Winfield Area Extended

McKnab-Bess and the Prairie Oil & Gas Company, drilling on the Zeien acreage, in the SW SE NW Section 19-32-5e, extended the Winfield area of Cowley County, when the hole began to fill up with oil at seven feet in sand encountered at 3047 feet. Later the well made several flows.

In the Benton district of Butler County, the third offset test to the Lario Oil & Gas Company's Glancey 1, discovery well, is getting deep. It is Sinclair Oil & Gas Company's Johnson 1, south offset to the original producer.

Large Gas Well

Tulsa.—East of the south end of the Little River field, or the Cromwell sand producing area of Little River, Magnolia Petroleum Company's Naijer 1, SWc Section 18-7-7, blew in for an estimated 25,000,000 to 40,000,000 feet of gas last week from 3158 feet.

A. P. I. Engineering Division Has Big Attendance at Tulsa

TULSA. — The Mid-Continent Division of Development Production Engineering of the American Petroleum Institute completed a two-day session at the International Petroleum Exposition and Congress, during which time some very interesting papers were read to more than 350 engineers gathered during the various sessions.

J. R. McWilliams, production engineer for the Skelly Oil Company and chairman of the Mid-Continent division, opened the meeting. W. G. Skelly, president of the Skelly Oil Company and president of the Exposition, addressed the engineers and introduced J. Edgar Pew, vice president of the Sun Oil Company, Dallas, who gave the opening address. E. B. Reeser, president of the Barnsdall Corporation and of the American Petroleum Institute, made a short talk praising the work of the engineers and urging them to aid in the universal adoption of the unitization plan.

H. C. Otis, superintendent of production, Arkansas Natural Gas Corporation, Shreveport, Louisiana, presented his paper on "Methods of Tubing High Pressure Wells." This was the same paper he gave before the A. I. M. E. session. Frederic H. Lahee of the Sun Oil Company, Dallas, gave a very interesting illustrated talk on crooked holes, showing how the deep tests wander away from the vertical.

The afternoon session was very interesting. The entire session was devoted to the paper of D. L. Trax, Gypsy Oil Company, on repressuring. E. O. Bennett, Continental Oil Company, Ponca City, was chairman. Bennett is considered an authority on repressuring and led a very interesting discussion of the paper.

C. L. Shirley, Shell Petroleum Corporation, Tulsa, started the Tuesday morning meeting with his study of "Comparative Operating Costs of Prime Movers for Drilling Wells." Spencer B. Terry, Pratt & Whitney Company, Hartford, Connecticut, later explained the function and application of the gauges to oil country material. An excellent display and description of A. P. I. Gauges was given.

Additional Failures In the Sasakwa Area

Tulsa.—More failures continue to be added to the Sasakwa area of southeast Seminole County. Indian Territory Illuminating Oil Company's Powers 1, NEc SW Section 13-6-7, diagonal southwest offset to the southwest extension discovery well, is shutdown with a hole full of water from the Wilcox sand at 4569-70 feet.

The north offset to the new failure, also looks bad. It is Sinclair Oil & Gas Company and Kingwood Oil Company's Tigers 1, SEc NW Section 13-6-7. It filled up 500 feet with water in four hours from the Wilcox sand at 4514-18 feet.

The southeast edge of the field was also apparently located during the past week, when Indian Territory Illuminating Oil Company's Patten 1, NW NE NW Section 18-6-8, found a show of oil and 2300 feet of water in the Wilcox sand from 4105-06 feet.

The Sasakwa field is now pretty well defined to a small area, and no big production is anticipated from the region. Water intrusion is making headway on the producing wells to further this belief.

Earlsboro Open Flow Test Shows But Slight Drop

TULSA. — The Earlsboro field showed a potential gauge of 50,529 barrels when the open flow gauge was taken on October 6. This is but slightly under its previous open flow. The output of the pool has been cut more than 50 per cent. as indicated by the daily out put last week when it dropped as low as 14,229 barrels. The day following the new gauge production was down to 17,688 barrels.

It is interesting, with proration down before the state operators, to review briefly the production records of the Seminole district. It was discovered July 16, 1926, and has produced up until Septemebr of this year 368,100,000 barrels of oil, not including the 43,500,000 barrels recovered at St. Louis, which would put the Greater Seminole gauge over 400,000,000 barrels easily.

The district has extended until it now covers 24,520 producing acres, not including St. Louis, or 15,012 barrels per acre.

Approximately 3500 wells have been drilled in the area at a cost of $60,000 each, or $210,000,000 as a grand total. Figuring the recovery of Greater Seminole at an average price of $1.50 per barrel the pool has yielded $552,150,000 out of which must come the drilling cost, operating, etc.

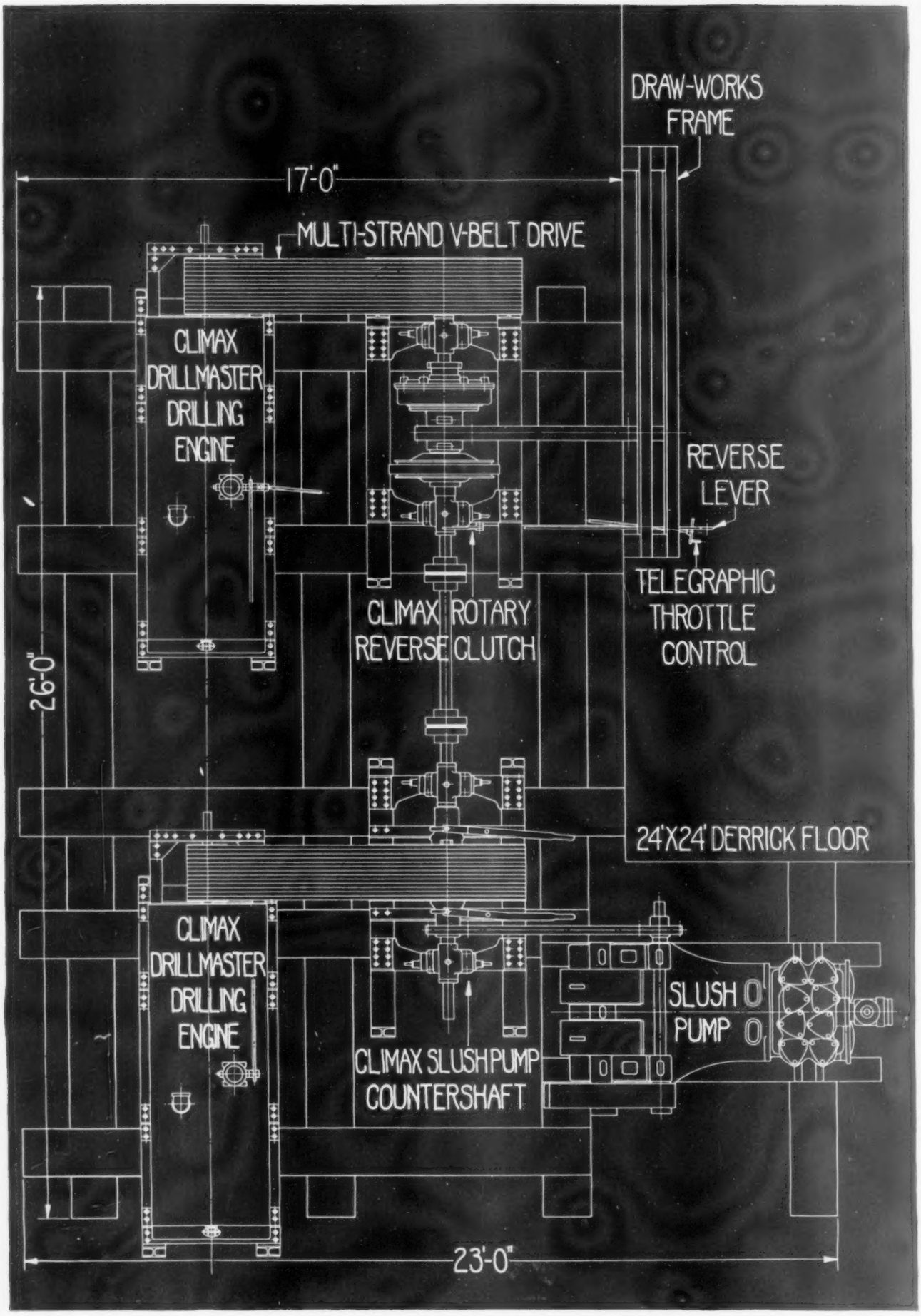
It is interesting to notice that the first attempts at proration in the field were made during November, 1926, or approximately 3 years ago. Since that time it has been first under proration then under open flow, with more than half of it under proration, and yet it has been able to establish its big recovery as previously shown.

Northwest Pearson Test Has Water in Hole

Tulsa.—The wildcat of Amerada Petroleum Corporation and Indian Territory Illuminating Oil Company on the Vineyard tract, in the NW NE NE Section 15-7-3, northwest of the Pearson field, in Pottawatomie County, Oklahoma, has 3500 feet of water in the hole from the Simpson sand topped at 4852 feet, with total depth of 4910 feet. It made 255 barrels of oil from the Hunton lime through a bradenhead last week.

Crude Shipments

Beaumont, Texas. — Coastwise shipments of the Sun Oil Company from its crude oil terminals at Sun and Sabine on the Beaumont-Port Arthur ship channel during September amounted to 671,046 barrels.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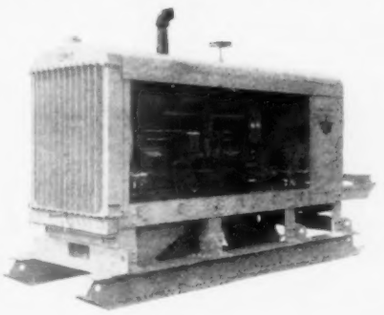

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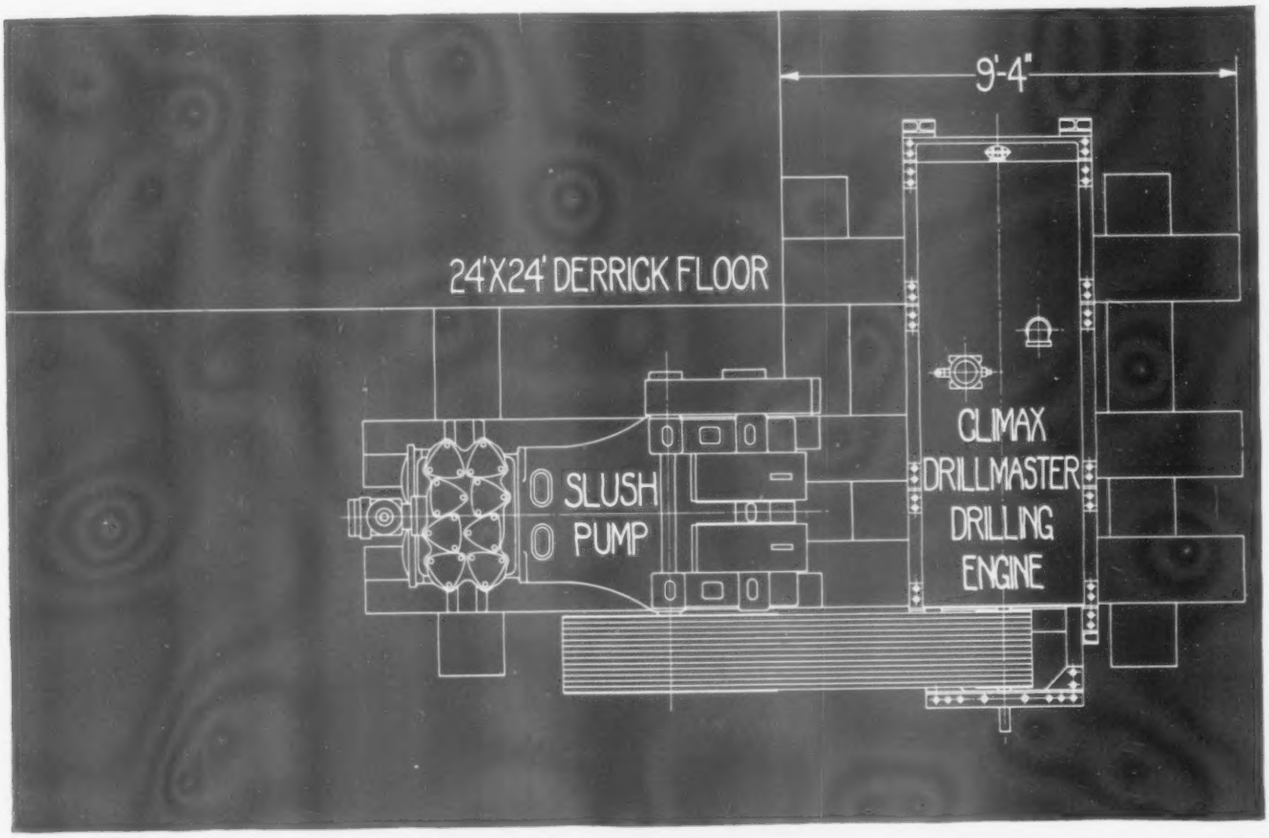

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North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

Drilling Rush Gets Underway In New Pecos County Areas

SAN ANGELO, Texas.—Drilling contractors with heavy duty drilling machines have a corner on the large volume of work under way and getting started in and near the Taylor-Link and Rowan-Tong pools, Pecos County. Speed and economy offered by a machine in completing a well to the 1600-foot lime horizon in this section of the West Texas district has popularized this type of drilling equipment. The demand for machines suitable for this work has been greater than the supply, thus resulting in a number of the more active contractors purchasing new ones, or having outfits shipped in from distant points.

More than 50 machines will be at work in the two pools and nearby wildcat areas by mid-October, and a few successful completions from tests now under way will stimulate the demand, as the general attitude of the lease owners is to drill up their property lines as they become proven for production. Early this week the two pools, including outpost tests, were credited with 42 active operations, and 17 locations, machines and rigs coming up. This active campaign is largely based on hopes held out by the operators that future completions in the two pools will bring forth more flush oil production than the eight wells scored to date, with two more showing oil and in process of completion.

Discovery Well Now on Pump

The discovery well of the Rowan-Tong pool has declined to the status of a pumper, but standing idle pending completion of pipe line connection late this week, while the seven completions in the Taylor-Link pool have a combined flow production of less than 1500 barrels daily.

The active drilling areas in Pecos County are 10 to 18 miles from the nearest supply houses and railroad shipping points at Girven and McCamey. Operators have learned that machines can be moved in and set up much faster than standard rigs, with a great saving in cost, and have excluded the rotary because of the shallow depth not justifying the expense involved in installing the type of rotary needed to penetrate the hard lime formations. Derricks will be used when wells decline to a pumping status.

A price range of $4.50 to $5.50 per foot is being paid drilling contractors for this drilling, with most operators supplying fuel and water. A few of the early contracts were made at $4.25 per foot, with water and fuel furnished, but this figure was found non-profitable for the contractor. Since most machines are equipped with oil or gas engine power, the fuel expense is rather small, while water is plentiful at shallow depths. Natural gas is now available in ample quantities in vicinity of the Taylor-Link pool. Completed wells are costing from $15,000 to $20,000 each.

Active Contractors

Among the contractors now engaged in drilling of one or more tests are the following: Harry Adams, Henry May, Stoney Martin, George McQueen, Eastland Oil Company, Corzelius Brothers, K. Kimberlin, Cotter Drilling Company, Jim McCamey, Meyers Drilling Company, G. R. Thomas, Liner Drilling Company, George Farley, Harry Harper, Scott Foster, Charles Flaherty and Brothers and George Graham.

Four to six strings of pipe are needed to drill and complete producers, with the majority of the operators starting off with 15½- or 12½-inch surface pipe. The presence of a troublesome quicksand formation ranging from 150 to 300 feet in depth necessitates the driving of pipe 50 to 100 feet, while crevices, or caverns at shallow horizons add to the hazard of crooked holes. The Tidal Oil Company's McDonald 1, a southwest offset to the Rowan-Tong pool discovery well, encountered a cavern at a shallow depth that appeared of an immense size, as indicated when an electric light was lowered for a bird's-eye view from above. A similar cavern was found by the Milham Corporation to the north.

Handling Heavy Casing

Heavy strings of large casing are handled successfully by the machines, as illustrated by the performance of the outfit used by Henry May, Fort Worth, contractor, on the Independent Oil & Gas Company and Rowan-Tong's McDonald 2. This test was spudded September 22 and drilled with an 18-inch bit to 300 feet in 4½ days, including time lost in running 15½-inch casing to 255 feet, and driving same through the quicksand another 50 feet.

Cementing 10-, 8¼- and 6⅝-inch strings of casing is practiced by most operators because of danger of shallow gas blowouts, and also to control water encroachment at various depths. This general section of Pecos County is known for its prolific sulphur water horizons in the lime, and heavy flows of water, ranging up to 40,000 barrels daily have been tapped by tests drilled on the edge of the Taylor-Link pool. Unless the casing is well anchored in cement, this water works up behind the pipe into salt and other formations that dissolve readily. Drillers of wildcats in this general section of the county have been known to spend more than the cost of drilling a test in trying to plug holes that struck the prolific

Pecos County Activity

The status of field work early this week in the Taylor-Link and Rowan-Tong pools, Pecos County, is given in detail below by companies:

Company—	Locations Machines Rigs	Drilling Tests
California Company	..	1
Continental Oil Company	5	1
Cosden Oil Company	1	..
Dittman Drilling Company	1	..
Gulf Production Company	..	1
Henshaw (Angelo Pet., Inc.)	..	2
Independent and Rowan-Tong	..	2
Landreth Production Corp.	6	7
Landreth-Angelo Pet.	1	2
Landreth and W. H. Dunning	1	..
Landreth-World Oil Company	..	4
Merrick & Bristow	..	1
Milham Corporation	..	1
W. A. Moncrief et al	..	1
Red Bank Oil Company	..	1
M. M. Rowan et al	..	1
Shell Petroleum Corporation	..	3
Sun Oil Company	..	3
Taylor-Link Oil Company	2	4
The Texas Company	..	2
Tidal Oil Company	..	2
Tower-McKenna, Inc.	..	1
Transcontinental Oil Company	..	1
World Oil Company	..	1
Total	17	42

water horizons, owing to the hole not being properly cased and cemented.

Since constractors are speeding up drilling as much as possible to make a number of holes before the campaign is completed, many operators are inserting a clause in their drilling contract that requires the contractor to re-drill, or drill a new hole should it deviate from five to 15 degrees from vertical. The latter figure is the most general allowance.

The Landreth Production Corporation, Fort Worth, is setting the pace with development work in the two pools, having full or controlling interest in 13 active tests, with machines moving in on eight more. The company is also starting work on two wildcats to the northwest of the Rowan-Tong pool, including one that will be a west offset to the south 436-acre lease in Section 26, as a one-half interest in the latter tract was purchased last week from the Simms Oil Company for $400,000 cash. The Simms Oil Company retained operating control. Landreth Production Corporation has placed orders for 24 80,000-barrel steel tanks and is at work on an eight-inch pipe line to its tank farm and car rack at McCamey, with tentative plans to handle outside oil from either of the two pools.

Sun Releases Holdings in Cranfill-Reynolds Deal

Dallas, Texas.—Producing leases and royalty interests owned on a 50-50 basis by the Sun Oil Company and the Cranfill-Reynolds Company in the West Texas and Luling districts have been acquired by the latter for a consideration of approximately $3,000,000, being part cash and the remainder payable in stock issues. A gross production of about 1300 barrels daily is being obtained from the properties involved in the transaction.

An almost solid block of 9000 acres of proven and semi-proven leases in Fisher County, West Texas district, is the most important unit in the deal, as seven flowing and pumping wells on this leasehold are averaging 1050 barrels of high gravity oil daily from lime at the 3100-foot level. The property has been operated heretofore by the Cranfill-Raynolds Company, and plans are to proceed with development work on a steady basis. The latter also acquired full control of a one-sixty-fourth royalty interest under four sections in the Hendrick field, same being partly developed. The wildcat pumper completed last October by the two companies in the townsite of Lytton Springs, Luling district, and surrounding acreage also goes to the Cranfill-Reynolds Company.

Headquarters of the Cranfill-Reynolds Company are in the Fidelity Union building, Dallas. Transfer of employes from Cisco, Corsicana and other points will not be completed for a week or more.

Lea County Operators Will Use 40-Acre Unit Plan

ARTESIA, New Mexico.—Spotting of locations at the center of 40-acres is beginning to take with operators in the Jal field, located in Southeastern Lea County, and three new locations announced during the past week are to carry out the plan initiated by Humble Oil & Refining Company. The latter company's William Lindley 1-B, which is flowing 550 barrels of clean oil via tubing through a one-half inch choke from broken lime at 3365-3438 feet, was spotted in the center of the southeast 40-acres of Section 14-25s-36e. Empire Gas & Fuel Company is to drill a north offset, adhering to the same spacing, while Humble Oil & Refining Company is to drill a north and east offset to the latter, thus creating a corner offset for the Continental Oil Company, which will probably fall in line with the plan. One producer to each 40-acres is considered adequate drainage for the lime, while operators are eager to avoid close spacing of wells. Most of them have big development campaigns ahead in Lea County.

Hobbs Wells Good Producers

Mid-West Refining Company's Leech 1, which was reported last week as giving Hobbs field its fifth producer and extending the oil area one-half mile to the south, averaged 945 barrels 36 degree gravity oil daily October 3, after starting off at rate of 55 barrels per hour from lime at 4105-65 feet. This Section 15-19s-38e and has been shut Section 15-19s-38e and has been shut-in for storage. Prairie Oil & Gas Company is to offset it to the east. Walker Oil Corporation's Terry 1, the nearest producer to the north, was deepened from 4146 feet (corrected depth) to 4184 feet, resulting in a small gain in oil flow at 4150-55 feet. This well flowed 575 barrels of 36 degree gravity oil during the 24 hour period ending October 4. Lancaster et al are reported to be making a location for a deep test in the northwest corner of Section 2-19s-36e, being about 10 miles due east of the Hobbs field. Having failed to make a satisfactory oil producer from the shallow lime, Humble Oil & Refining Company's Bowers 1, northwest outpost well in the Hobbs field, is drilling at 3505 feet. This well continues to flow small heads of oil from lime at 3143-3304 feet.

Lynch Pool Well

Cranfill-Reynolds Company's State 1-B, located in the Lynch pool, is credited with having pumped and flowed 26,900 barrels of 31 degree gravity oil from September 9 to 30 from lime at 3749-55 feet. This is the largest steady producer in the county, having connection with the Texas Pipe Line Company, and its performance has led to the staking of eight nearby locations. Continental Oil Company's State 1, an east offset, has landed 8¼-inch casing at 1008 feet on its water well.

Two Pools Discovered In Young County

Wichita Falls, Texas.—Two deep wildcat tests in lower Young County were brought in as flowing wells during the past week to establish new pools. Bob Lindsey and associates' N. E. Seddon 1, located in the northeast corner of the east one-half of the Henry Garms survey, abstract 104, flowed 100 barrels of high gravity oil during first hour from lime at 4165-68 feet, and had to be shut in for storage and pipe line connection. Flutey et al's Wadley Bros. 1, located near the center of the north line of Section 64, A. W. Coffman Survey, abstract 2185, encountered gas at 4131-35 feet, and flowed 20 barrels oil during first hour from lime at 4146-47 feet before shutting in for storage. These producers are only several miles apart, but in wildcat territory lying north of South Bend.

Transcontinental Oil Company's Corbett 1, which was reported last week as having opened a new pool near the south line of Young County, is flowing about 400 barrels daily at 4005-11 feet while waiting a connection by Prairie Pipe Line Company, since the small line built to the well from Stephens County by the Texas Pacific Coal & Oil Company proved inadequate.

6½ Year-Old Well Flows 300 Barrels Per Day

Wichita Falls, Texas.—Having produced in excess of 900,000 barrels of 38° gravity oil, Sinclair Oil & Gas Company's L. P. Moran 1, located in southwestern Young County, continues to flow an average of 300 barrels of clean oil and one million cubic feet of gas daily after being on production for six and one-half years. The revenue derived from the sale of the natural gas production from this unusual well has more than paid for the drilling cost and operating expense. Moran 1 was spudded January 14, 1923, and completed March 25, 1923, flowing 681 barrels initial from sand at 2517-29 feet. Stauffer & McNallen drilled the test on contract. Three nearby tests drilled later by Sinclair Oil & Gas Company missed the sand, and were abandoned. The unusual performance of the lone producer is believed to be due to a crevice condition, as its flow has been continuous. Paraffin accumulation in the casing has not been removed within the past year.

Howard-Glasscock Extension Influences Proration

BIG SPRING, Texas. — Continuation of proration enforcement rules on the two principal deep lime horizons in the Howard-Glasscock County area for another six-months period is largely due to strides being made in the development of the Settles field's 2200-foot lime along a southwest trend from the discovery well. This horizon was recently extended to the southwest, giving it a length of four miles, and about 20 completions are expected along this stretch within three months. The 2200-foot lime is the most popular of the deep horizons encountered in this area, the oil ranging from 31 to 34 gravity, with comparatively little water trouble. It is also productive at a uniform depth over a greater area than the other deep horizons, which are defined and some what spotted.

Since proration rules were applied to the deep horizons in August, 1928, the crude yield during the ensuing 13½ months is 11,737,060 barrels, according to Umpire E. E. Andrews, with September production amounting to 833,511 barrels from 125 pumpers. The 2500-foot, or middle lime horizon, has been of the least importance, and beginning October 1 proration restrictions were removed from the same by the commission, acting on recommendations of operators and members of the proration advisory committee. The commission also issued an official order extending proration rules for six months.

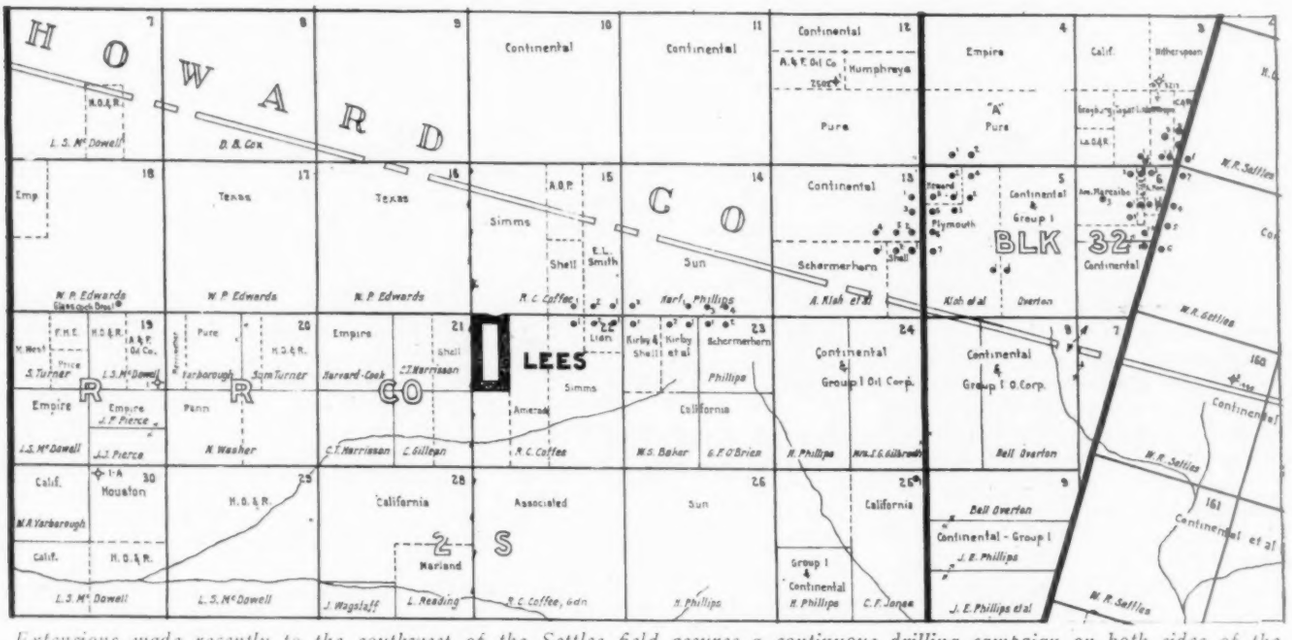
With few exceptions all wells completed within the past year in the Howard-Glasscock County area have lacked flowing pressure, and go on pump for initial production, but because of high fluid level 1500-barrel pumpers are frequently listed among the completions. Existing proration rules prevent swabbing, shooting and close drilling of wells, with some exceptions, and because of the water encroachment upon the lower lime such restrictions have been beneficial. The deep horizons are allowed to produce a maximum of 37,500 barrels daily, with individual wells limited to about 75 per cent. of their potential daily output. A one-hour pumping gauge is taken each month by the Umpire to determine estimated potential output of the deep wells for proration purposes. In cases where operators have been forced to drill more than one producer on a 40-acre unit to the same horizon, such wells are limited to 70 per cent. of the estimated potential.

Kirby-Atlantic Deepening

The southwest portion of the Settles field became active after Kirby Petroleum Company-Atlantic Oil Producing Company et al's Phillips 1 developed a pumper last August from lime at 2212-68 feet. This well is trying to deepen after the Schermerhorn Oil Company's Phillips 1, an east offset, pump-

CRUDE RECOVERY IN HOWARD-GLASSCOCK DISTRICT

Company—	Total runs 12½ months	No. of Wells	September Production	Total Production
Amerada Petroleum Corporation....	677,830	8	53,711	731,541
American-Maracaibo Company.....	893,680	8	52,246	945,926
California Company	157,776	2	24,082	181,858
Cosden Oil Company	334,881	6	7,437	342,318
Cranfill-Reynolds Company	30,549	1	6,009	36,558
Continental Oil Company.....	762,387	12	77,860	840,247
Howard County Oil Corporation....	195,382	2	39,222	234,604
Humble Oil & Refining Company...	116,878	3	26,145	143,023
Kirby Oil Company	.....	1	2,092	2,092
La. Oil & Refining Corporation.....	245,992	2	11,469	257,461
Lion Oil & Refining Company.....	.....	1	11,343	11,343
Magnolia Petroleum Company.....	1,218,822	15	49,019	1,267,841
Merrick & Bristow Company.....	769,287	4	38,536	807,823
Moody Corporation (Superior).....	1,386,228	21	95,153	1,481,381
Owen-Sloan and Cosden.....	1,235,868	7	67,704	1,303,372
Plymouth Oil Company.....	285,684	3	64,654	350,338
Pure Oil Company	.....	1	1,446	1,446
Schermerhorn Oil Company.....	980,709	10	75,949	1,056,658
Shell Petroleum Corporation.....	226,935	2	15,239	242,174
Sprague Oil Company.....	211,171	3	6,688	217,859
Sun Oil Company	769,953	6	56,354	826,307
Taylor-Link Oil Company	58,169	2	4,703	62,872
Ward Oil Company.....	244,109	3	35,074	279,183
Witherspoon & Glasscock.....	101,259	2	11,376	112,635
Total	10,903,549	125	833,511	11,737,060



Extensions made recently to the southwest of the Settles field assures a continuous drilling campaign on both sides of the Howard-Glasscock County line, as pictured above, and also prolongs the need for proration enforcement

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ed 1700 barrels initial at 2151-2291 feet. The Lion Oil Refining Company's Coffee 1, located further west, made 600 barrels initial on pumping test at 2152-2240 feet, and the Sun Oil Company's Phillips 1 made the fourth successful completion in the extension area with an initial of 850 barrels on pump at 2110-2292 feet. The latter is drilling four tests along the south line of its 640-acre lease, comprising Section 14, using cable tools. Sun Oil Company is using its own tools for this work. Most of the other operators are using rotary to the top of the lime, then standardize to complete, with an average price of $4.50 per foot paid for rotary work, with fuel and water furnished contractors.

Total crude recovery from the 2200, 2500 and 3000-foot lime horizons in the Howard-Glasscock County district since proration restrictions became effective in August, 1928, to the close of September is shown in the accompanying tabulation.

Three New Prospective Spots Opened in West Texas

SAN ANGELO.—New territory in the West Texas district was thrown open to development through the partial completion of wildcats flowing by heads in Ector and Taylor Counties, and prospects of a pumper being completed in the townsite of Grand Falls, Ward County.

In contrast to the probable success in store for the group of operators participating in the above strikes, those engaged in conducting an active drilling campaign in the Taylor-Link and Rowan-Tong pools, Pecos County, now find that they have over played their hands in development work. The latter pool had a doubtful future early this week when a southeast offset to the discovery well missed the lime pay.

Penn Oil Company and associate's Kloh 1, put Ector County in the spotlight October 7, when it made a head of oil estimated at 175 barrels after the bailer was run, with oil coming from lime at a total depth of 3725 feet. Three thousand barrels of tankage was being erected Tuesday to permit the drilling in of this test, which is located about three miles northeast of the Connell pool, and possibly is an extension rather than a separate area.

Taylor County Strike

Taylor County made a new bid to become a producing area at the beginning of the week when Dunigan Brothers and Shell Petroleum Corporation's wildcat test on the French and Dividson land began flowing high gravity oil by heads from sandy lime at 2387 to 2389 feet. The owners are lowering six-inch casing to the top of the oil horizon to make a test of production, with prospects of a 100-barrel producer, or better. This wildcat is located near the center of the south half of the W. R. Willis Survey No. 122 and about 10 miles west of Abilene. A short lifed pumper was scored last year about five miles to the south by the Mid-Continent Petroleum Corporation in the same horizon, but has since been plugged.

Apline Oil & Development Company's Boogher 1, located in the townsite of Grand Falls, Ward County, and about three miles southwest of the Shipley pool, developed 1000 feet of 35 plus gravity oil in the hole from sandy lime at 2133 to 2140 feet. Water appeared when this test was deepened early this week.

Rowan-Tong Operators Disappointed

Owners of high priced leases and royalties in and near the Rowan-Tong pool were given a jolt October 8 when Tidal Oil Company's McDonald 1, a southwest offset to the discovery well, failed to show oil in lime at 1445 to 1590 feet. Late reports credit it with drilling in anhydrite at 1650 feet, or 3090 feet below the bottom of the hole of the producer. Tidal Oil Company's test is not to be classed as a failure until it encounters sulphur water in the lime, but its changes are now rated as low for a commercial producer.

The discovery well was given six-hour pumping test early October 8, and made about 50 barrels in six hours.

In the Taylor-Link pool, the California Company's University 1, located west of the discovery well, missed the big pay, but October 7 was spraying 20 barrels oil and eight million feet gas daily while drilling lime at 1697 feet. Landreth Production Company and World Oil Company's University 3 "B", experienced a gas blow-out at 910 feet rated good for 40 million feet daily, but it will be killed to deepen.

Ector County Revived

The oil strike made by Penn Oil Company et al on the Kloh land will serve to revive activity in Ector County after nearly two years of dormancy. This wildcat producer is located 330 feet from the center of the south line of Section 7, block 44, T. P. Ry. Survey, T-3-S, and about three miles northeast of small pumpers developed in 1927 by The Cosden Oil Company and The Texas Company on the Connell ranch. Humble Oil & Refining Company gave Penn Oil Company one-third interest in a block of six sections, centering around Section 7, for the drilling of a 4000-foot test, and the former sold a one-sixth interest in same to the Atlantic Oil Producing Company. Humble Oil & Refining Company will have operating control, and will probably arrange for a direct pipe line outlet by extending a small line from the Humble Pipe Line Company's Hendrick-McCamey unit. This wildcat test began showing 32.2 degree gravity oil from lime at 3715-18 feet, and at 3720-25 feet filled 2000 feet in 16 hours. Further operations were suspended to erect tankage. The lime was topped at 3410 feet, with a surface elevation of 2925 feet.

A single row of sections of University fee land lies between the above wildcat producer and the Connell pool, and same were sold to the highest bidder October 1, with Landreth Production Corporation paying the top price of $20,194 for the N½ of N½ Section 3, block 35, and $16,194 for the N½ of N½ Section 2, block 35. Gulf Production Company, Prairie Oil & Gas Company and Amerada Petroleum Corporation were successful bidders on similar sized tracts, but at less than one-half the average price paid by the former company. Sub-surface data indicates that this University acreage may be the best part of the field should the new well later be connected with the Connell pool.

New Ward County Pool

Penn Oil Company and Atlantic Oil Producing Company's wildcat producer on the Bennett land, which recently established a new pool for Ward County, flowed 216 barrels of 35 degree gravity oil during the first 24 hour gauge after a shot of 200 quarts at 2510-2618 feet. This well flowed an average of 180 barrels of clean oil daily the next three days, with the Atlantic Pipe Line Company connected. In addition to the Ward and Ector strikes, the Penn Oil Company scored a wildcat strike in Guadalupe County, near Luling, in August. The latter well is flowing above 1000 barrels daily at 2418 feet, but apparently from a crevice, as two offsets proved failures.

In Cochran County, Continental Oil Company is moving in a 500 barrel tank to make a production test of its wildcat test on the Slaughter ranch, which was shot last week with 80 quarts at 4860-85 feet, after plugging back from hole full sulphur water at 5000 feet. The shot caused water to break in again, but indications are that about 1500 feet of oil in the hole is available for testing. This oil is about 19 degrees gravity.

A. I. M. M. E. Meets

San Francisco.—The 138th General Meeting of the American Institute of Mining and Metallurgical Engineers is being held here October 7 to 10, inclusive, following the various regional meetings. The meeting opened with a good attendance of engineers from all parts of the country, many Eastern members being present, prior to their departure for Japan to attend the World Engineering Congress.

Gulf Coast Field Developments

JACK LOGAN, *Staff Representative, Houston, Texas*

Refugio Field Active; Six Wells Completed

HOUSTON.—Refugio continues one of the most active fields of the Gulf Coast, and during the past week that activity was reflected in six completions, all oil producers.

Houston Gulf Gas Company's Vance 1 came in flowing 400 barrels daily through two one-quarter-inch chokes from sand at 3683-3701 feet. Saxet Oil Company finished Fox Heirs 1 originally on October 3 as a gas producer with 1400 pounds pressure at 3665 feet, but killed the gas and drilled nine feet deeper, making a 600-barrel well, through three-eighths-inch choke, at 3665-74 feet.

Houston Oil Company's Wilson Heard 8 came in flowing 500 barrels, two per cent. water, through a one-quarter-inch choke, from sand at 3674-86 feet. The same company's Fannie Heard 6, a workover, came in producing 50 million feet of gas and 20 barrels oil daily at 3680-95 feet.

Korona Oil Company completed two wells during the week. Its Reilly 2 came in flowing 132 barrels daily through a one-quarter-inch choke from sand at 3667-75 feet; and its West 1 came in flowing 600 barrels through a one-quarter-inch choke from 3663-71 feet.

Houston Gulf Gas Company's Shelly 6 is drilling at 5538 feet; Shelly 8 is drilling around 500 feet; Fannie Heard 8 is drilling at 2175 feet; Fannie Heard 4, a workover, is drilling at 3204 feet; M. F. Lambert 1 is rigging up; and O'Brien 5 is cementing casing at 3676 feet.

Mission Drilling Company's J. F. B. Heard 1, a workover, sidetracked at 3150 feet and is now drilling at 3391 feet; Fox 2 is drilling at 2592 feet; Shelly 2 is drilling sand at 2100 feet; Shelly 3 has spudded; Mitchell 2 is re-rigging up; Powers 2 is rigging up; and Kuykendall 1 is rigging up.

Saxet Oil Company's Claud Heard 10 is coring sand at 3640 feet; Powers 1 is drilling at 2642 feet; Serafino 1 is a derrick; Swift 1 is rigging up.

Morgan Oil Corporation's Fox 2 is drilling at 3230 feet; City 2 is drilling at 1440, and City 3 is a derrick.

Sun Oil Company's Leisering 1 is drilling at 1587 feet, and No. 2 is rigging up.

Houston Oil Company's Pratt-Hewitt-Rooke 10 is drilling at 2483 feet; Rooke 13 is drilling at 2912 feet; and Rooke F-2 is drilling at 2610 feet.

Korona Oil Company's Reilly 3 is drilling at 2487 feet. Dr. Hewitt's Cemetery 1 killed gas and will drill deeper. Independent Oil & Gas Company's O'Brien 1 is drilling sandy shale at 4393 feet. Benedum Trees Oil Company's Rooke 3 is drilling at 3400 feet. The Texas Company's Clint Heard 1 is a derrick.

Average daily production at Refugio is now around 8000 barrels.

Deep Hole Is Abandoned Near Lockport Field

Houston.—Shell Petroleum Corporation has abandoned its deep wildcat test, located three-quarters of a mile west of production at Lockport, Louisiana. The drill was stopped in limey shale at 7201 feet.

This is among the deepest wells ever drilled in the Gulf Coast, the depth of 7000 feet having been exceeded in only six other instances, all during the past few months.

This well began drilling February 17, 1929, and reached its final depth about October 1, 1929.

Casing in the hole included 1463 feet of 12½-inch, 50 pound; 5082 feet of 9⅝-inch, 40 pound; and 6662 feet of 6⅝-inch, 28 pound.

Port Neches Field Adds Another Producer

Houston.—The Texas Company's M. H. Stark 1, located in the new Orange County field north of Port Neches, has been completed as the second producer of the area. The well came in October 4 flowing 1680 barrels daily of 21.2 corrected gravity pipe line oil, temperature of which was 90 degrees. Total depth of the hole is 3173 feet, and casing in the well includes 1163 feet of 10-inch and 3137 feet of 6⅝-inch.

The discovery well of the field, The Texas Company's Kuhn 1, was completed May 9, 1929, at 3160 feet, with an initial production of 1900 barrels. It is still flowing. The production on October 5 was 504 barrels net oil, 38 per cent water and 12 per cent b. s. M. H. Stark 1, is a direct north offset to the discovery well.

The Texas Company's Polk 1, an east offset to the discovery well, is drilling sand and gravel at 700 feet, and Gulf Production Company's H. J. Stark 1 is drilling around 2200 feet.

This field is located in the midst of a wide expanse of marsh land, about 2½ miles in an easterly direction from the Neches River, and three miles north of Port Neches.

For transportation of materials The Texas Company has dredged out a canal from the Neches River to the drilling locations.

This new Orange County field is about 6½ miles east of Spindle Top and five miles west of the Orange field. Although Spindle Top is a known salt dome, Orange is of a non-salt dome type of field, which is rather unusual along the Gulf Coast. The new field opened by The Texas Company is also believed to be of the non-salt dome type, the seismograph, it is reported, having indicated an irregular condition but not a salt plug, and the drilling that has been done having more or less verified that indication.

New Wells at Sulphur Dome Boost Output

Houston. — Sulphur dome, Calcasieu Parish, was the outstanding field of South Louisiana during the past week from the production standpoint, several completions having boosted the field's output to a daily average of 8900 barrels for the week. Second place in production was shared by Lockport and Vinton, each of which produced 4300 barrels daily on the average.

The most recent completion at Sulphur was Union Sulphur Company's Fee 750, which came in flowing 1100 barrels pipe line oil daily through a three-quarters-inch choke, from total depth of 3333 feet. The crude tested 22 gravity. Several days earlier Fee 751 had come in flowing 2000 barrels pipe line oil daily at 3636 feet.

Union Sulphur Company is fee owner of the Sulphur field and is sole operator there. Its Fee 730 is drilling sand at 5648 feet; Fee 752 is drilling sand at 2840 feet; Fee 753 is drilling at 500 feet, and Fee 754 is a derrick.

Considerable Activity In Old Humble Field

Houston.—The Texas Company on October 8 completed Landslide 269 at Humble for 1100 barrels 42.1 gravity crude daily at 5210 feet. Nine and five-eighths-inch casing was set at 4649 feet. That well was the second completed within a few days, its completion having been preceded by that of West Production Company's Foster Lumber Company 1, which came in flowing 1600 barrels pipe line oil, 30 gravity, with 275 feet of screen set at total depth of 4936 feet.

There is considerable activity now at Humble. The Texas Company's G. W. Dunman 1 is drilling hard sand at 3500 feet; Landslide 265 is standing at 5443 feet; Landslide 266 is standing at 4960

feet; Landslide 267 is running 2½-inch liner at 5113 feet; Landslide 268 is drilling brown shale at 4980 feet; and House 23, in the north part of the field, and the only test outside of the southeast end, has fluid standing 75 feet from the top of the hole, total depth of the well 4174 feet.

South Texas Petroleum Company's Morris 11 is drilling sand and shale at 4947 feet; Lee 1 set 478-480 feet of screen at 4248 feet and is flowing oil and wash water; and Burt 3 is drilling gumbo at 2740 feet.

Humble Oil & Refining Company's Glass 1 is in sticky shale at 5700 feet; Williams 4 has set 500 feet of screen at 4347 feet and is washing; Williams 5 is drilling shale at 4800 feet; Williams 6 is rigging up; Oats 1 is drilling gumbo at 2340 feet; and Trahan 1 is a derrick.

Continental Oil Company's Wagner 1 is drilling shale at 4932 feet.

Active Flank Drilling At Barbers Hill

HOUSTON. — Three producers were completed during the past week at Barbers Hill, all on the most recently productive sector of the field, along the south end of the east flank. The largest of the three wells is Yount-Lee Oil Company's Woodward 2, which came in flowing 1890 barrels of pipe line oil daily through one-half inch and three-eights inch chokes from 5340 feet. The other two new wells were both Sun Oil Company's. Its Wilburn Fee 1 came in flowing 300 barrels daily with four joints of screen set at 5409 feet; and Amanda McKinney 1, a direct west offset to Republic Production Company's Kirby 1, discovery well of that section of the field, was completed for 300 barrels at 5450 feet.

Production at Barbers Hill at the opening of this week was around 21,000 barrels daily.

Status of Drilling

There are numerous interesting drilling operations in the field, including semi-wildcat tests on various sides of the dome. Off the dome southeast of the group of producing wells, Yount-Lee Oil Company, which recently established a new depth record for the Gulf Coast by drilling to 8150 feet on the south flank of Barbers Hill dome, is now down 7070 feet in shale and lime in Kirby 1. This test is the seventh in the Gulf Coast to exceed the depth of 7000 feet. Incidentally, four of the seven have been drilled by the Yount-Lee Oil Company.

The Humphreys Corporation's Kirby A-8, exploration test on the northwest flank of Barbers Hill dome, is still fishing for drill pipe at 6440 feet.

Mills Bennett Production Company's E. W. Barber 1, semi-wildcat on the northeast flank, is drilling sandy shale at 5587 feet.

Near the center of the east flank of the dome Sinclair Oil & Gas Company's Wilburn 1, located about midway between groups of producers on the north and south ends of that flank, has set casing at 5178 feet over an oil sand and is waiting on cement to set.

East Flank Activity

There are numerous wells drilling on the east flank of the dome. Sinclair Oil & Gas Company's McKinney 1 has encountered an oil show in a sand at 5423 feet. McDaniels et al are drilling sand and boulders at 2100 feet in Woodward 3. Grayburg Oil Company's Wilburg 1 is drilling at 2000 feet. The Texas Company's Wilburn 3 is drilling lime and rock at 1950 feet; Wilburn 1 is drilling gumbo and lime at 2330 feet; and Wilburn 2 is drilling at 50 feet. Mills Bennett Production Company's G. W. Collier 1 is preparing to set screen at 5450 feet. Sun Oil Company's McKinney 2 is in oil sand at 5491 feet, and J. Wilburn 1 is drilling shale and lime at 4460 feet. Yount-Lee Oil Company's Woodward 3 is drilling water sand at 4155 feet. Moody Corporation's and Humphreys Corporation's Collier 1 is drilling in oil sand at 5037 feet, and Collier 2 is drilling lime at 4995 feet.

On the south flank of the dome Yount-Lee Oil Company's Chambers County Agricultural Association 8 is fishing for tubing at 4556 feet.

Hackberry Yield Boosted By Recent Completions

Houston. — On the eastern edge of the Old Hackberry dome, Cameron Parish, Louisiana, Yount-Lee Oil Company has completed Carter & Sweeney 1, in Section 22-12s-10w, as a flowing well at 3244 feet. One joint of screen was set, and the well came in flowing 1045 barrels of pipe line oil, 21.2 corrected gravity daily.

Near this well the Yount-Lee Oil Company is drilling Mrs. F. Lacy 1, located in Section 27-12s-10w, being in shale at 3260 feet.

Rycade Oil Corporation and Humble Oil & Refining Company have made location on the opposite side of the dome for Gulf Land 4 in Section 30-12s-10w. Several producing wells have been completed on that flank of the dome, but most of the production has been confined to the south and east flanks.

Boosted by the completion of several good wells a little over a week ago, the average daily production of Old Hackberry during the week ending October 5 was 3250 barrels, as compared with 2500 barrels daily the previous week.

Attempted Goose Creek Extension Abandoned

Houston.—Humble Oil & Refining Company has abandoned Simms-Smith 75 at Goose Creek in sticky shale at 6277 feet. This was a wildcat test, located southeast of Goose Creek production, in the William Scott Survey.

Its location is 4200 feet south, and a little west of Humble Oil & Refining Company's Simms-Smith 74, which was abandoned February 1, 1929, in sticky shale at 6967 feet. That well, in turn, was 2200 feet east and 950 feet north of Simms-Smith 73, which on May 15, 1928, came in flowing high gravity oil at the rate of 700 barrels daily at 6159 feet, but which was finally abandoned at 6245 feet.

Humble Oil & Refining Company has made location for a new test in that area, Simms-Smith 76.

Shell Will Test Dome In Brazoria County

Houston.—Another Gulf Coast geophysical prospect is due to be tested with its first well at once, Shell Petroleum Corporation having begun moving in material for Blakeley-Winston 1 on a seismograph prospect near Danbury in Brazoria County. The location has been made on a 522.8-acre tract in the H. T. & B. Survey. Indications of a salt dome were found in this area by the Shell Petroleum Corporation in 1929.

Lost Lake Dome

Houston.—Drilling has been started on several of the new locations made by Pure Oil Company at Lost Lake dome, Chambers County. Lost Lake 3 is drilling gumbo at 2130 feet; Mayes 1, which is drilling deeper, is now in shale and sand at 2736 feet; Mayes 4 is drilling sand and boulders at 680 feet; Mayes 5 is drilling clay at 46 feet; Mayes 6 is rigging up; Mayes 7 is moving in rig; and Mayes 8 is waiting on rig.

Black Bayou Dome

Houston.—Shell Petroleum Corporation has set one joint of screen in Watkins 13 at Black Bayou dome, Cameron Parish, Louisiana, Section 18-12s-12w, and is preparing to bail. Several small producers have been completed on this dome, where activity was started during the past year.

White Castle Dome

Houston.—Shell Petroleum Corporation's Wilbert 3 on White Castle dome, Iberville Parish, Louisiana, is now drilling shale at 5799 feet, having sidetracked around 5650 feet in the original hole.

Houston.—Grayburg Oil Company's wildcat, Ransom 1, located south of Richmond, Fort Bend County, in the J. Kuykendall Survey, has been abandoned in salt water sand at 4333 feet.

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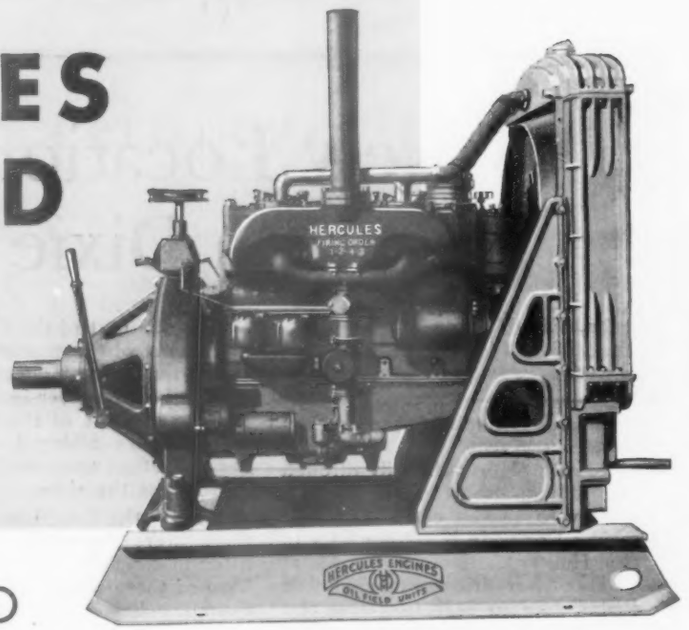

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HERCULES ENGINES

Louisiana-Arkansas Field Notes

18 New Locations Announced In Dixie Field

SHREVEPORT.—In the Dixie oil field of Caddo Parish, Louisiana, three edge wells are at testing stage.

A quarter of a mile east of Ray-Dawes' Hunter A-2, which was completed flowing 144 barrels daily through 2½-inch tubing from total depth of 2440 feet with 17 feet of broken sand, The Texas Company is setting liner to test its Hunter 2, Section 9-19-14, at 2440 feet. After drilling through cap rock from 2419 to 2421 feet, this test encountered oil sand from 2421 to 2423 feet and then went into sand with streaks of shale to 2440 feet.

On a direct line and a little over a quarter of a mile east of this well, S. T. Onyett, who is backed by the Rainbow Oil Company, is ready to drill plug in Dixon 1, SW SW Section 10-19-14, in which 6⅝-inch casing was set at 2382 feet.

Standard Oil Company of Louisiana's School Board 3, NW NW Section 16-19-14, a southern offset to the same company's School Board 1, in the same quarter, was bailed in October 6, flowing at the rate of 123 barrels from 2453 feet. The well had bailed dry at 2440 feet. Monday the daily flow gauged 200 barrels. This well is also an eastern offset to Gulf Refining Company's Hunter 3, NE NE Section 17-19-14.

Texas Company's Hunter 2, SW SE Section 9-19-14, nearly a quarter of a mile east of production, refused to flow when bailed at total depth of 2440 feet and will be put on the beam. Texas Company's Hunter 3, SW SE Section 8-19-14, tested salt water with a show of oil at 2448 feet and is waiting orders.

Standard Oil Company of Louisiana after bailing dry at 2441 feet in School Board 2 NE NW Section 16-19-14, is coring at 2485 feet. It is drilling gas rock at 850 feet in Hunter 9, Section 8-19-14.

The yield of the Dixie field is less than 9000 barrels daily. All of the four largest wells completed in the northwest part of the field have shown considerable decline from their initial production.

Eighteen Locations Made

Four new locations were announced in Dixie during the last week, all for the eastern part of the field. The most interesting of the quartet is Nesbit and associates' Burt 1, Section 20-19-13, across the Red River in Bossier Parish, three miles east of the Old River Oil Corporation's Sibley 1. This will be the first effort to extend Dixie production across the river.

Besides the four locations in Dixie there were fourteen other locations made in North Louisiana for the week. Two of these were wildcats. Leue Oil Company has derrick up for Taylor 1, Section 16-22-6w, Claiborne Parish, Colquitt district, and Paul C. Warren and associates have derrick up for Martin 1, Section 20-20-9, Hortman district, Webster Parish. Most of the locations in proven areas were in the Monroe and Richland Parish gas fields.

Completions in proven territory in North Louisiana were low during the week only three gassers being added. Two gassers on the north edge of Richland Parish gas field in semi-wildcat territory were also completed.

R. L. Gay, Trustee, who has two producers in the Zwolle wildcat district of Sabine Parish with a combined daily yield of approximately 200 barrels, at the 2100-foot level, has encountered 14 feet of sand showing oil and gas at total depth of 3414 feet in Long-Bell Lumber Company 1, Section 26-8-14, Sabine Parish, five miles north of the two producers. The formation at 3414 feet is in the upper Cretaceous, according to H. D. Easton, Gay's geologist, and is tentatively identified as one of the Trinity series. Gay is arranging to set six-inch casing in hard lime at 3369 feet for a test. This hard lime continues to 3392 feet, followed by eight feet of broken formation.

A log of this well shows it encountered gas from 3296 to 3310 feet after having encountered gas and oil in the chalk where eight-inch casing was set at 1839 feet

Louisiana Permits Show Gain Over Last Year

Shreveport.—Drilling activity in Louisiana for the first three quarters of the year 1929 is considerably ahead of activity for the corresponding period of 1928, as reflected by the total of drilling permits issued by the minerals division of the state conservation commission.

Drilling permits issued to October 1, 1929, aggregate 675, as compared to 518 issued for the first nine months of 1928. Permits for all purposes issued for this year to October 1 total 1198, as compared to 1022 for the corresponding period in 1928.

Eighty-five drilling permits were issued in September, this year, with Caddo Parish, feeling the effect of drilling in Dixie, leading other parishes with 19 new tests authorized.

Smackover Active

A mile and a quarter southwest of shallow production at 300-400 feet in Bellevue, Bossier Parish, Morgan and associates are shut down at 1300 feet in new hole in Weatherbee 1, Section 21-19-11, after the well blew out making gas and salt water at 1854 feet in a stratum identified as the upper Trinity. North Louisiana's deepest test, Magnolia Petroleum Company's McCook and Hibbler 1, Section 22-21-10, Webster Parish, tested 280 joints of drilling mud without any show of oil or gas in one foot of sand at total depth of 6888 feet.

Plugging back to the Nacatosh sand and new drilling to that stratum continued to create the majority of activity in the Smackover field of South Arkansas. Seven producers were added in that district last week. All except two also had much salt water. The best of the lot was in the northeast part of the field, being Skelly Oil Company's Wood 3, Section 34-15-15, which is producing 350 barrels of oil and a similar amount of salt water from 2004 feet. Magna Production Company, by perforating casing at 3006 feet, completed Rowland C-1, Section 14-17-14, Champagnolle district, Union County, as a 110-barrel producer, the first added in Champagnolle in several weeks.

In Mount Holly district, Atlantic Oil Producing Company and E. M. Jones have abandoned their location for Allen C-1, Section 25-15-18. Houston Oil Company is coring at 2757 feet in Wilson B-1, in the same section. Six miles to the north, Timberlake and associates are drilling at 1760 feet in Criner 1, Section 26-14-18. These are the only

News From Rocky Mountain Fields

active operations under way at present in Mount Holly.

Five new locations announced in South Arkansas were all in Smackover. Considerable interest is being manifested in O. W. Estes' Felsenthal 1, Section 2-18-15, Union County, in which 6⅝-inch casing was set at 2158 feet after a drill stem test showed gas along with six joints of mud and oil. Estes is about ready to drill in the test.

Laskin and Associates, after plugging back to 3600 feet from 3696 feet in Dennis 1, Section 11-20-23, Columbia County, Arkansas, tested salt water and have abandoned the hole. Chaywood Oil Company has abandoned as a dry hole Malvern Lumber Company 1, Section 17-2-17, Garland County, at total depth of 1668 feet. In Pulaski County, near Little Rock, Wonder State Development Company has abandoned Wilson 1, Section 21-2-11, as a dry hole at 1544 feet. A similar fate met W. F. Harris' Halbert 1, Section 32-4-4, St. Francis County, at total depth of 500 feet.

Wildcat Makes Strike Near Montana Border

Great Falls, Mont. — Although it is not in Montana, it is so nearly so that Montana operators are greatly excited over the discovery of the Vanalta Oil Company six miles north of the town of Sweet Grass, about one-quarter mile north of the International line; production in the test was obtained as the bit entered a stray sand of the Ellis formation at 2500 feet and developed a foud to five million cubic flow of gas and a production of oil variously estimated from 50 to 500 barrels. The crude has a gravity of about 25 degrees—similar to that in the Kevin-Sunburst field. The well generally is regarded as opening new field that has promise of having international importance. It is expected that extensive exploration will follow in this area, including the Red Coulee field, which is controlled largely by independent operators. It is the intention of the Vanalta to deepen its well in the hope of increasing the production.

Pilot Butte Test Shows

Riverton, Wyo.—The Kinney-Coastal Oil Company's deep test in the old shallow Pilot Butte field, has considerably more gas at 3377 feet than it had at 3365 feet, where the well was shot and tested. The gas is coming from what is supposed to be the top of the Muddy sand, the original objective, and is said to be wet with light green oil.

Crude Petroleum in Alberta*

By DR. THEO. A. LINK

Chief Geologist for the Imperial Oil Company, Ltd., in Western Canada

THE actual and possible oil-fields of Alberta are found in two wholly different physiographic areas—the foothills and the plants. This physiographic difference is traceable to the geological setting, or history of this western country, and gives rise to diverse conditions and methods in the geological exploratory work, the actual drilling for oil, and also the production methods. It is a well-known fact that the crude oil discovered to date in these two areas is placed on the extreme ends of the table of crude oil classification. Turner Valley produces a very light colored, crude naphtha of high Baume, while from the Skiff wells and the Wainwright area is recovered heavy crude oil near the bottom of the Baume table of classification.

New Pool Speculation

There is great speculation regarding the possible source or location of a crude oil lying between these two extremes. There are numerous theories regarding the whereabouts of such a pool. Some think that deeper drilling in the foothills belt will disclose it; others think that flank wells, on foothills structure should lead to its discovery; others are hoping to find it in the higher formation of the plains, while still others look to the deeper lying paleozoic beds of the plains area. These are not all of the views, but they represent the most prevalent ones held in the circle of oil operators of Alberta. They are all more-or-less based upon sound reasoning, as well as past experience from other oil fields of the world.

While the present oil development, both in the plains and foothills of Alberta, may not lead to the discovery of a medium grade crude oil, it is believed certain that the present operations will throw enough light on the subject to prove of great value when drilling technique has reached the stage where 8000 and 10,000-feet holes are an everyday occurence.

Before taking up this question of a medium grade crude oil, it is in place to summarize the geological setting in the plains and foothills.

Summary of Geological Setting

The Madison limestone underlies a great part of the prairies, as well as the foothills. Above this we recognize the Fernie shales as the equivalent of the Ellis. The Kootenay sandstones, various-colored shales and coal seams lie above the Fernie, and above the former is recognized the Dakota or Blairemore sandstones and shales. The Benton, or Colorado shales, are recognized in the plains as well as the foothills, and above them is a thick series of sandstorm and shales with thin carbonaceous and coaly members, the Belly River series, etc. This is the end of similarity. A prospect beginning in the basal Belly River series, in the foothills belt, has very little chance of reaching the Madison limestone at a depth less than 7000 feet, while a hole beginning in that same horizon out in the prairies usually encounters the top of the lime around 2800 feet.

The actual thicknesses of the beds, at these two locations, are essentially the same, but the drilling thicknesses are not. This is due to extremely high dips and repetition by faulting in the foothills belt, which was caused by the extreme amount of compression to which they were subjected during the building of the Rocky Mountains. Eastward from the foothills in the plains, the effects of these compressive forces were almost nil, so that the rock strata lie flat in the prairies.

The location and detection of gentle structures in the prairies call for different methods of geological exploration. Exact elevations must be taken on easily recognized "key-beds." Structures in the plains are usually very gently and cover considerable area so that a location anywhere within a given quarter or even a whole section is accurate enough. In the foothills this is not the case. Locations must be "just right", or else failure will result. The trend of Turner Valley and the relative depths of the various holes on that structure bring this out very clearly.

Deeper Drilling in the Foothills Sturctures.

Regarding the possibilities of striking a medium grade crude oil by drilling deeper into the formations below the Royalite 4 zone, one can point out some significant facts. It has already been demonstrated in Turner Valley that the first slight showings of oil encountered in the shallow lying Benton formation are the heavier. As greater

*This paper was read at the International Oil and aGs Convention held in Calgary, Alberta, September 19, 20 and 21, 1929.

depths are reached, in the underlying Dakota, Kootenay and Fernie, the gravity of the oil becomes progressively higher. Finally, when the dolomitic zone of the Madison limestone is encountered, a very high gravity crude naphtha and wet gas is the product.

With this information available one would be tempted to predict that at greater depths a lighter naphtha and drier gas would be expected. However, the McLeod No. 4 well, which encountered a new horizon some 1200 feet in the limestone (probably a bed in the Devonian) produces a naphtha of slightly lower gravity than in the upper horizon, although the gas is drier. With these facts staring one in the face, it becomes necessary to give an opinion regarding deeper drilling with due reservations and an open mind. My personal opinion is that deeper drilling is in order.

In nearly all oil and gas fields, where sufficient drilling has been done, and where the anticline theory of migration and accumulation exists in its simpler form, it has been demonstrated that the dry gas is struck at the crest; the wet gas and light crude slightly down the dip from the crest; the heavier crude still further down the flank; and away down the dip from this one usually encounters salt water.

There is not sufficient information available regarding Turner Valley, but in general it has been demonstrated that the larger wells which produce larger volumes of relatively drier gas, such as Royalite No. 14 and McLeod 4, are near the crest of the minor folds or fault blocks within the valley, while those wells which encounter the producing horizon down the flank, such as Foothills No. 1 and Okalta No. 1, produce more naphtha per cubic foot of gas—in other words, a very wet gas.

If this condition is general, and if one could drill a very deep hole, away down the west flank of Turner Valley, it may be possible that a light crude oil be encountered. Here again the drilling of an exceptionally deep hole (6000 feet or more) into the producing zone of the dolomite, would be in order.

Drilling Prairie or Plains Structure to Deeper Paleozoic Horizons

In Turner Valley the wells finished to-date have passed through the Mesozoic section of rocks and penterated the Upper Paleozoics with very light crude oil and high grade naphtha the result. In the plains this same section has been penetrated in widely separated localities with only small amounts of heavy crude as the reward. The Kevin-Sunburst field, across the border, is, of course, the exception.

There are many who are advocating the drilling of very deep tests into the remaining Paleozoic section of rocks in the prairies. No such well has been drilled in Canada, but the results of several such tests in northern Montana have not been too encouraging. Whether or not these have any bearing on the ultimate results in Alberta, time alone will tell. I feel confident that some operators are going ahead sooner or later with sufficient optimism to make such tests.

There are very few geologists who do not fear that in those structures which lie westward from the outer edge of the Foothills Belt the metamorphism of the rocks has been so great that the chance for the recovery of crude oil is very slight. In spite of this, however, one can count at least ten derricks in Waite and Death vallies and the West Highwood structure. In addition there is drilling going on in the Ghost River area, the Morley Reserve, etc. All of these locations are on what geologists term, "Inner Folds".

The "carbon-ratio" theory is cited as only one of the arguments against such prospects. However, when one considers that at Oil City, inside the Rocky Mountains themselves, crude oil was encountered years ago, and is actually escaping through a surface seepage, one can't help but feel optimistic regarding these more westerly folds. The drill, of course, will settle this argument.

In connection with this, one might add here that, due to the fact that lower formations are outcropping in the cores of these inner structures, it would be possible to drill much deeper into the limestones and also much shallower flank wells. This, however, is, in part offset by a gradual increase in thickness of the formations westward toward the mountains.

The Drilling of Eastern Border Foothills Structures.

There still remains one more important consideration to give this peculair occurance of light hydrocarbons in the foothills and heavy oils in the plains. This is the suggestion that, lying between these two belts, one might encounter a crude of medium gravity. To put it more clearly: "What about a fold or structure lying to the east of Turner Valley, or any other Outer Benton Fold?"

The answer to this question is relatively simple. As already pointed out, it is nigh impossible to reach the Madison limestone at a depth shallower than 7000 feet by starting to drill in the Lower Belly River on the high dips of a foothills type fold or fault. Such being the case, it merely boils down to whether or not the drilling technique has been advanced sufficiently to drill holes to depths from 7000 to 10,000 feet. When that time has arrived, these outer bordering Belly River and Edmonton folds will furnish some very interesting information. From a geological standpoint, it seems impossible, in fact highly improbable, that these folds will ultimately be the bearers of the long sought, medium-grade crude oil of Alberta. At present they seem out of the question from a commercial standpoint.

One might ask the question: "Why not drill on a gently dipping eastern Border-Foothills Fold?" The answer to this is that none have been discovered to-date, and if any do exist, they involve beds very much higher up in the section than the Edmonton, and consequently the drilling thickness would again be too excessive.

Conclusion

In conclusion, it is in place to remark that the present development in Alberta, both in the plains and the foothills areas, may not lead to the discovery of a medium grade crude oil. It is impossible to state, or even venture a guess as to the exact geological conditions, or the approximate geographic location of such a body of crude. However, we feel certain that present operations, if followed to their logical conclusions, will throw enough light on the subject to be of great value when the drilling technique has reached the stage where eight to ten thousand foot holes are an every day occurrence.

Purchase Gas Property

Casper, Wyo. — Announcement is made here that Rocky Mountain Gas Company, subsidiary of the Ohio Oil Company, has recently purchased the gas production on Byron dome, two gas wells, lines in the field, and distributing system in the town of Lovell, northwestern Wyoming, from the Lovell Gas Company. Oil rights on leases on Byron dome are not included in the trade.

Beulah Dome Showing

Pueblo, Colo.—Wildcat test of Beulah Dome, about 25 miles southwest of Pueblo, is said to have a showing of free oil at 750 feet.

"Canned" Gas Is Popular In Rural Centers

Los Angeles. — Natural gas is being shipped in containers to districts not regularly served by this commodity and countries as far away as Australia are also being served with the "canned" product for domestic use. Use of natural gas in this form is growing in Arizona and New Mexico, while localities in the Imperial Valley of California are extensive users. A dry gas is used and under present conditions in California may be purchased at a low figure.

News From California Fields

BRAD MILLS, *Staff Representative, Los Angeles, California*

California Supervisor Makes New Attack on Gas Waste

LOS ANGELES.—Striking a direct blow at gas waste in the Ventura field and using a new plan of attack, Reed D. Bush, state oil and gas supervisor, has issued an order enjoining all operators in the field from an unreasonable waste and ordering a more equitable distribution of the gas sold to consuming districts. The operators were cited on the basis of findings that the waste at Ventura is altogether "unreasonable" and that the situation may be remedied by the application of measures authorized in the gas saving statute.

Some of the more pertinent provisions of the order follow:

1. Gas wasted must be limited to 5000 cubic feet per well.

2. Certain areas in the field may produce oil with a gas oil ratio as high as 1/20,000.

3. Certain areas of the field must not produce oil with a gas-oil ratio in excess of 1/10,000.

4. No further gas may be shipped to Santa Barbara and San Luis Obispo counties, because the Elwood field is capable of fulfilling these requirements.

5. Gas shipped to the Los Angeles district must be limited to 112½ million cubic feet until March 15. From this date until September 15, 1930, the quantity must be limited to 87½ million cubic feet, the reason being that the Los Angeles basin district is producing enough gas at a lower gas-oil ratio to meet additional requirements.

6. The state selected 140 million cubic feet as a total gas outlet, and prorated this amount to the various leases on the basis that each lease's potential oil production bears to the field potential.

7. Allows operators to form an association and conduct unit operations.

8. Requires that all wells that may be killed and brought back on production, or new wells, be limited to a 1/10,000 gas-oil ratio.

9. New wells will be allowed to flow for five days at a maximum rate and the operators of such wells will be given 20 days to bring the producers to the necessary gas-oil ratio.

It is believed that the order will reduce production by about 20,000 barrels daily and bring the field total to about 40,000 barrels.

Los Angeles.—Independent operators are meeting with seven major companies October 8, and it looks as if an agreement will be reached concerning the proposed plan to prorate gas in the Santa Fe Springs, Long Beach, Seal Beach and possibly the Ventura fields. This is an important meeting and both sides are prepared to make concessions in order that something can be done to stop gas waste and thereby lower oil production.

The situation looks brighter than at any time during the past three months.

Little Actually Done at Santa Fe Springs

Little was accomplished during the week toward curbing gas waste at Santa Fe Springs. The agreement drawn up by the seven companies and submitted to independent operators for their approval is circulating among the various smaller operators for their signature. A few companies have signed the agreement, but a larger percentage have not affixed their signature.

The huge gas waste at Kettleman Hills, over which the state hopes not to take action, has increased to about 200 million cubic feet. This will be eliminated when the pressure declines to a point which will permit shutting in of some of the four wells allowed to flow under the government's agreement.

The state's plea for an injunction to restrain operators from wasting gas at Santa Fe Springs will be heard October 14, but the week probably will be consumed by the hearing in Superior Court at Los Angeles. Independent operators are marshalling their forces to fight the injunction plea to a finish.

The present waste is at least 600 million cubic feet daily and constitutes a great economic loss to the state's resources. With this great waste is a huge overproduction of oil, and if operators succeed in fighting off the state's efforts to stop the waste for another 60 days, a cut in crude prices is not only warranted but should be made on the basis of supply and demand.

There is little tankage left and several companies are running on the ragged edge in this respect. Reservoirs are being pressed into service for fuel oil, but desirable tankage for gasoline and the lighter crudes is very scarce.

Majors and Independents Disagree

A meeting of independent operators was held October 2, at which Judge E. D. Reiter of the Miley Oil Company presided. Prior to forming a permanent organization, the opinions of a dozen operators were aired. There was unmistakably an overwhelming opposition to the agreement drawn up by the seven major operators and designed to take the gas sold on contract and otherwised used in the Santa Fe Springs, Long Beach, Ventura and Seal Beach fields on a pro rata basis from all operators. Of the several talks made, only one independent operator offered the agreement his whole-hearted support. A few voiced mild objections, while several others attacked the agreement as being unequitable, unfair and as favoring the seven major companies. Little was actually accomplished at the meeting as far as meeting the terms of the agreement was concerned.

After the agreement was read in full, H. R. MacMillan, president of the MacMillan Petroleum Company and the only independent who expressed himself as favoring its provisions, made a motion that it be accepted by the operators in the four fields involved in its present form. The motion failed and several rather heated discussions ensued.

George Machris of the Wilshire Oil Company said that the agreement was full of loop holes as far as he could see, adding that the major operators wanted to cut Santa Fe Springs production to 48 per cent. of the present total.

Walter F. Haas, attorney for the Bellview Oil Syndicate and chief spokesman at the injunction hearing in Superior Court September 20, attacked the gas saving law in general, declaring that in his opinion it was unconstitutional and void. He added that the veiled nature of the statute was to curb

oil production and not to save gas. He contended that propaganda was being spread to arouse public sentiment in favor of the law was misleading. Haas claimed that the state can not take or regulate an operator's property and give it to the public as a whole. He argued that if the independents sign the agreement drawn up by the majors, they will be a "sorry bunch." "Who has the contracts? Do you have them?" Haas thundered. He ended his argument against the agreement by contending that to sign it might tie up the property for some time to come.

Arguments Pro—and Con

F. M. Kinkaid, attorney for the Lloyd interests at Ventura and the Dabney-Johnson Oil Corporation, said the agreement affected four fields as a group, while the gas saving law indicated that only one field should be considered under any one agreement. He stated that production might be cut as much as 75 per cent. at Ventura under the agreement and that little of the surplus gas would be taken care of. He contended that entering into the agreement might prohibit an operator from contesting the constitutionality of the law at a later date.

H. L. Dunnigan, attorney for the Rio Grande Oil Company, argued that the gas saving law was not to prevent gas waste but to prevent unreasonable waste, if necessary to produce the oil.

A. L. Murphy, attorney for the Wilshire Oil Company, attacked the agreement, stating that the committee of seven appointed from the major companies practically had the power to appoint the remaining seven. He concluded by saying that to sign the agreement, the operator might cloud his title and prevent himself from contesting the constitutionality of the law.

One attorney contended that if an operator signs the agreement, the court may hold that he admits the validity of the statute.

H. R. MacMillan, a large independent operator, threw a bombshell into the meeting when he urged that the agreement be signed as the best possible remedy yet found for the situation. He said the chief object of attorneys is to disagree, and urged caution. He made a strong plea for the independent operators to cooperate with the seven majors. MacMillan said that the agreement may reduce production but it will stabilize and maintain prices. While the companies are wrangling among themselves, they should be attempting to reach an agreement, he concluded.

"Avoid Entanglements"

Charles A. Son contended that in his opinion the state already has the right to force public gas companies to purchase gas pro rata from all companies.

R. R. Templeton of the Pacific Western Oil Company urged the operators to steer clear of any entanglements which will force them to shut in where a shut-down will work a hardship.

George Machris said that an operator could offer to give 50 million cubic feet of gas to the gas purchasing companies and the latter would turn the offer down flatly, being contented to pay around 10 cents per thousand cubic feet. He also claimed that if the large operators got control of the situation, it would even be difficult for the small operator to wildcat.

One operator explained after the meeting that the gas companies had refused to accept gas free of charge because they purchased on contract and because they could not depend upon the spasmodic offering of free gas, as the independent operator saw fit to deliver it.

Henry Woolner, independent operator at Long Beach made a sensible talk in which he urged the independent operators not to talk so much but to try to drive the best bargain they could with the major companies. He said they must make a sensible fight together to reach an agreement to reduce gas waste or they would have to fight later as individuals. He said modification of the proposed agreement should result in a satisfactory settlement of the dispute.

A permanent organization was effected, with Judge E. D. Reiter of the Miley Oil Company as president; Herbert MacMillan, MacMillan Petroleum Company, George Machris, Wilshire Oil Company, and Henry Woolner, vice presidents; and Thomas Lipps, Buckeye-Union Oil Company, secretary. It was agreed that the officers will constitute the executive committee.

The chief motive of the organization at the close of the meeting seemed to be the driving of a better bargain with the major companies with reference to the cooperative Gas Conservation Association, although some of the operators apparently did not know just what they did want.

South Dome of Kettleman Hills Disappointing

COALINGA, Calif.—Failure of Ohio Oil Company's Smith 1 to flow on a recent production test at 7002 feet was a disappointing development of the South Dome at Kettleman Hills and places a slightly doubtful aspect upon the extreme southeastern flank of this great producing district. The final shutoff was made at 6690 feet with nine-inch casing, but only the oil sand cut during the last 100 feet was considered as a possible producing body. The sand immediately below the shutoff gave only a faint cut. The well failed to respond to swabbing and at best probably will make only a small well. The great pressure required to lift such a column of mud and water probably is lacking and it will be necessary to swab to a much lower level before getting results.

Continental Oil Company's Elliott 12-8, recently completed with an initial production of 7000 barrels, plus a good quantity which was blowing into the air, is still flowing at the original rate. The company has not attempted to place a connection on the fifth opening on top of the master gate, because of the possibility of a pressure great enough to break the fittings. This opening acts as a relief valve, although it is responsible for a large oil waste.

Standard Oil Company will deepen No. 81-11, not being satisfied with a production of only 1000 barrels of 60 gravity oil from 6675 feet. It is believed that when this well is drilled to 7000 feet, production will be increased many times.

Shutting-in agreements are now in effect on all three domes and Kettleman Hills has been definitely removed as a menace for at least another two years. It is believed that if no restrictions had been imposed upon completions in the field, the industry would have been completely demoralized by a flood of 60 gravity crude. The heavier oil producing areas would be forced to operate at an actual loss if a production of 250,000 barrels were developed at Kettleman Hills, many economists believe.

Pacific Ocean Field May Yield Considerable Oil

Santa Barbara, Calif. — Activity on tideland permits in the Elwood field is increasing weekly and this area promises to become a major factor in California's total production within a few months. Several of these permits are located as well on structure as many of the best producers on the mainland and are sure to have a large initial production.

Operators are overcoming the handicap of poor transportation facilities by using barges to transport material and heavy equipment to the ocean piers. Companies holding leases opposite the beach strips have flatly refused permittees and lessees to cross the former's property. Regardless of this handicap, tideland operators have succeeded in starting nearly a dozen wells on improved ocean piers.

This field has become unique in California and promises to be the first to yield a large production from wells in the ocean.

Clarke Zone May Reach 140,000 Barrels Soon

LOS ANGELES. — Santa Fe Springs again spurted forward during the the past week, aided by several good Clarke zone completions and the opening up of O'Connell zone producers which had been beaned back several weeks ago. The field is assuming an even more menacing attitude and unless something definite is accomplished along conservation lines, a new peak from the Clarke zone is not impossible.

After promising to stage a steady decline, the field has caught its breath and production certainly does not look lower during the next month. The O'Connell zone will not register the rapid drop experienced in the Buckbee sand, although the peak in this formation is definitely passed. The Clarke zone promises to be a real sensation and when inside wells are completed production will undoubtedly rise rapidly.

One company increased the size of beans on several of its O'Connell zone producers and the results were reflected in a small weekly increase from this sand, where a decline ordinarily would have been registered.

New Clarke Zone Peak

The 36 wells producing in the Clarke zone during the previous week showed a decline of only 4000 barrels during the past week, standing at 77,000 barrels, as against 81,000 barrels at the end of the former period. The five new wells added about 13,500 barrels, giving the zone a net gain of about 9000 barrels to a new total of 90,000 barrels. This is a new peak for the sand.

The Clarke zone should be producing at least 140,000 barrels within another month with some estimates running even higher. Upward of 50 wells will be completed during the next five weeks and a peak is expected some time in December, provided drilling continues unabated.

A total of 41 wells are now drilling in the Clarke zone, with seven cemented over and three ready for completion in the sand. This large number is especially significant and means a high weekly average on completions.

Only a few wells are drilling for the Clarke zone on top of the structure, but the number of inside wells started for this deep zone is expected to increase weekly. Due to the location of the drilling wells, average initial production of the next 50 completions is not expected to run above 2600 barrels.

May Have Found Deeper Sand

The Texas Company's Patterson A-10, though admittedly a rather crooked hole, seems to have found a new zone below 8400 feet. The well is now standing at 8535 feet, being tied up with a fishing job. The bottom of the Clarke sand contained water and there was a distinct break between this sand and the rich oil sand in which the well is now standing. This is apparently an important discovery, and may mean the development of a still deeper sand.

The deepening of nine wells was started during the past week, all of which were intended for the Clarke zone. Many other wells will be carried deeper as they falter in the upper zones.

Gas injection in the upper sands resulted in a substantial increase in shallow zone production.

Clarke Zone Completions

The outstanding Clarke zone completions of the week were General Petroleum Corporation's No. 212-C, a 3000-barrel producer at 8000 feet and George F. Getty's Baker 27, which was completed at 7763 feet with an initial yield of 3500 barrels. The oil from both wells showed only small cuts.

Standard Oil Company of California maintained its fast pace in the Clarke zone by completing three average producers. They were Koontz 9, a 2700-barrel producer at 7991 feet, S. W. C. 21, completed at 7939 feet as a 2000-barrel well, and S. W. C. 24, a 2300-barrel completion at 7982 feet. This trio brought the company's deep zone production almost to 40,000 barrels. The phenomenal success of Standard Oil Company in the Clarke zone around 8000 feet successfully rewards the company after a series of virtual failures in the Buckbee and O'Connell zones.

Santa Barbara Wildcat

Santa Barbara, Calif.—General Petroleum Corporation probably could have made a small producer of Erburu 1, a wildcat located about eight miles west of Elwood, but has decided to deepen the well from 1350 feet. The oil was a much lower gravity product than anticipated and showed a low casing pressure. If regarded as a commercial well, a new field has been added to the several in Santa arbara County.

Majors Are Active In Leasing at Inglewood

Los Angeles.—In spite of the questionable character of the producing sand in the recently opened townlot extension of the Potrero field at Inglewood, several new locations have been made and leases are changing hands at increased prices. Major companies are among those actively bidding for desirable acreage, while several small operators have acquired townlot drilling sites only.

Yorke and Lockhart successfully completed Blinn 1 as a 1000-barrel townlot producer and added to the excitement in a new boom sector. The well is located about three blocks north of James Pollard's Blinn well, which was the discovery producer in the immediate district. The oil is about 50 gravity and shows only a small cut. Although the well is producing from only a thin body of sand, such a production of light oil must be regarded as significant as it now stands.

About 20 tentative locations have been made in the townlot area but a few of these probably will not be reflected in the drilling column for some time.

The City of Inglewood is expected to grant drilling permits for all who apply through the city council.

Developments Indicate Drilling Campaign

Taft, Calif.—Maricopa Flats continues to hold the center of interest in Kern County, and with new operators in the district the present drilling campaign does not promise to show a decline for several months. The producing area seems limited northeast and southwest of the discovery well but the sector lying to the southeast may be productive for a considerable distance. Geologists believe that the productive acreage may run to 1500, with a higher figure possible. Production is coming from brown shale and sand and promises to be steadier than in some of the old brown shale producers of the early days.

Three Completions Have 5500 Barrels Initial

Ventura, Calif.—Associated Oil Company added three more completions to the Ventura field during the week—McGonigle 7, Lloyd 58 and Lloyd 170—with a total initial production of 5500 barrels. Lloyd 107 was the best of the trio, yielding 3000 barrels from 7297 feet, while Lloyd 58 was a 1500-barrel producer at 7745 feet and McGonigle 7, a 1000-barrel well at 6901 feet. These three producers represent a wide range of depths, but their locations on structure partially offset the differences in total depths.

Inauguration of the gas saving methods is not expected to materially reduce drilling, but production will show an appreciable decline if the restrictions are imposed. More than 30 wells are now drilling, with locations about offsetting completions from week to week.

Natural Gas Industry Now Growing in California

Los Angeles.—A wide distribution of natural gas in California is in the making, through construction of several large gas lines and the proposed construction of several others. The line leading to San Francisco is expected to feed smaller lines leading to cities enroute, while other parts of the San Joaquin Valley will have direct connections with the Buttonwillow and Kettleman Hills fields. The great potential capacity of the latter has been the direct cause of nearly all of the recently constructed and proposed lines.

Study of Sub-Surface Conditions In Erath County, Texas

(Continued from page 179)

which is defined as a secondary sand in the University of Texas Bulletin No. 2132. This is a condition where the quartz sand is formed by silica dissolved out of the cherty and sponge spicule beds of the Marble Falls Limestone and crystallizing in veins or cavities at certain porous horizons. The X-Ray producing sands have the same characteristic sharp sides or crystal faces as the secondary sand referred to in the above bulletin. Production in the X-Ray field is not governed by folding as the major feature. Sand porosity and the loose or "soft" condition of the sand is the main volume control. Shots in "tight sands" have increased the volume greatly. No water is found in the two producing sands on or near the top of the fold, but they carry water on the north and northwest side of the steep dip. Although only small shows of oil have been found in some of the wells drilled in the field, it is reasonable to believe that somewhere close to the present X-Ray field the same sands will yield commercial production of oil. A few good shows have indicated that this is possible.

The east side of the Bend Arch through Erath, Palo Pinto and Jack Counties has been regarded by some as too low for production of commercial quantities of oil or gas. Yet, when changes of the subsurface as found in the northwest part of Erath County are taken into account, along with the possibilities to be found in the thick section of the overlying Strawn, it is quite reasonable to expect other lateral folds similar to the Desdemona-X-Ray fold.

Shreveport Geological Society Has Meeting

Shreveport.—At the first autumn meeting of the Shreveport Geological Society, comprised of petroleum geologists in East Texas, Louisiana, Arkansas, Mississippi, Alabama, and West Tennessee, held October 4, M. W. Grimm, district geologist for the Tidal Oil Company, with headquarters here, was elected president for the ensuing year. He succeeds S. P. Borden.

C. M. Dorchester, geologist for the Gulf Refining Company, was elected vice president, and William F. Chisholm, director of the minerals division of the Louisiana Conservation Commission, was re-elected secretary-treasurer.

Plans were discussed at the meeting for entertainment of the fifteenth annual convention of the American Association of Petroleum Geologists, at New Orleans, March 20-22, when the local society will be host. J. Y. Snyder, president of the national organization is a member of the local society and resides in Shreveport.

A field trip into the salt dome territory of South Louisiana probably will be on the program at New Orleans. The entertainment will also include pleasure automobile trips through the Evangeline country, steamboat trips on the Mississippi, and a post-convention trip to Havana, Cuba.

Garfias Predicts Production Gain For 1929

THE world's production in 1929 will total close to 1467 million barrels, according to Valentin R. Garfias, manager of the foreign oil department of Henry L. Doherty & Company, in a survey of the petroleum production of the world. This is an increase of about 145 million barrels, or nearly 11 per cent., as compared with an increase of only 2½ per cent. in 1928. The average yearly increase since 1925 has been approximately 100 million barrels.

Production in the United States in 1929 should reach 1010 million barrels, an increase of approximately 12 per cent. over 1928, Mr. Garfias believes. This production represents approximately 68.9 per cent. of the world's total — about the same as the proportion in 1928 and 1927. This increase is attributed primarily to deeper drilling in the California fields and to the discovery of new pools in Texas and Oklahoma. The average shut-in production is estimated to be from 10 to 15 per cent. of the total.

Venezuela Shows Big Increase

In the foreign field, Venezuela, which has risen from fourth to second place in three years, will show, it is forecast, the largest increase — 29 million barrels or over 25 per cent more than 1928 figures. Mexico seems almost certain to bear out the prediction made last year by Mr. Garfias, and will fall behind Persia in oil production. Since 1927 Mexico has fallen from third to fifth place among the world's oil producers. Should this downward course continue, Mr. Garfias believes that Roumania and possibly Dutch East Indies will outrank Mexico in 1930. Venezuela, in spite of the conservation agreements mentioned above, has risen from fourth to second place in three years.

Part of the Mexican decrease may be attributed to publication of the draft of a proposed labor law, while in Colombia publication of a proposed petroleum law also has had a disturbing effect. It is expected, however, that both of these laws will be modified materially before being put into effect. Meanwhile, production in Colombia has been kept up to the capacity of existing pipe lines.

Roumania's Outlook Good

Russia is maintaining itself in third place without difficulty, with an estimated production of 95,500,000 barrels, an increase of 7,700,000 barrels over 1928. Roumania is expected to continue its steady increase and, thanks to a more liberal petroleum law, has even better prospects for the future. Persia, besides increasing production in existing fields, added other proven oil areas. There has been no production from these fields as yet, but the shut-in production is reported to be in excess of the present yield. Minor producing countries, Mr. Garfias predicts, also will show substantial increases.

Mr. Garfias considers that the serious consideration of a more definite policy of oil conservation has been one of the most important developments of the year. The United States government aided the conservation program considerably by stopping further permits to drill on government lands; California put into effect a gas conservation law, and the oil industry itself showed a marked tendency toward consolidation of its various branches into larger units. In many fields, among them Venezuela, mutual conservation agreements were entered into by the producers. Aside from progress toward conservation, the most notable event was probably the placing on a commercial basis of the refining experiement commonly known as the hydrogenation process.

WORLD PETROLEUM PRODUCTION

In Thousands of Barrels

		1929	1928	1927
1	United States	1,010,000	901,474	901,129
2	Venezuela	135,000	106,000	63,134
3	Russia	95,500	87,800	77,018
4	Persia	43,000	42,080	39,688
5	Mexico	42,000	50,150	64,121
6	Roumania	32,500	30,600	26,368
7	Dutch E. Indies	30,000	28,500	25,967
8	Colombia	20,400	19,900	15,002
9	Peru	13,000	11,970	10,135
10	Argentina	9,000	9,100	8,630
11	India	8,500	8,300	7,878
12	Trinidad	8,200	7,750	5,712
13	Sarawak	5,600	5,290	4,943
14	Poland	5,200	5,530	5,342
15	Egypt	1,900	1,840	1,267
16	Japan	1,800	1,800	1,700
17	Ecuador	1,300	1,090	537
18	Canada	1,000	618	477
19	Sakhalin	880	509	440
20	Iraq	850	650	200
21	Germany		683	663
22	France		520	504
23	Czechoslovaka	1,370	150	149
24	Italy		43	44
25	Others		23	25
		1,467,000	1,322,370	1,261,073

Organization Formed to Dispose of Sulphur Water

Luling, Texas. — Co-operative plans for the disposal of the sulphur water being produced along with oil in the Salt Flat field have been perfected by the lease owners. The Salt Flat Water Company has been organized with a capital stock of $50,000, with the following incorporators: Joe H. Russell, H. K. Arnold and P. C. Sealey. The organization will also function in settling water damage claims against operators by land owners.

Crooked Creek

Great Falls, Montana.—The Montana Corporation, a new company organized by the E. B. Coolidge interests, is drilling a test on Crooked Creek structure, 22 miles due north of Billings, in an attempt to develop a gas supply in South Central Montana. Objective sand is expected at 2200 ft.

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COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

CALIFORNIA

Company, Well and Loctaion	Initial Production Bbls.	Depth
FRUITVALE—		
Western Gulf Oil Co., K. C. L. 8-B	400	7725
KETTLEMAN HILLS—		
Continental Oil Co., Elliott 12-8	7000	6876
LONG BEACH—		
Dabney-Johnston Corp., No. 17	1000	7470
No. 46	500	6630
Graham and Loftus, Davis 1	200	6845
Hancock Oil Co., Signal 18	1200	7450
Otis Hoyt, No. 4	1200	7175
Richfield Oil Co., R. C. 8	400	7550
MARICOPA FLATS—		
Signal Oil and Gas Co., Sheehan 4	800	3325
ROUND MOUTAIN—		
Shell Oil Co., Jewett 7	100	1665
SANTA FE SPRINGS—		
Ambassador Pet. Co., Baker 12	1800	7929
Italo Pet. Co., Brunson 2	3300	8042
Richfield Oil Co., Howard 2	1300	6430
Standard Oil Co., Koontz 10	2500	7995
Koontz 11	1400	8045
Walker 16	300	8140
Walker 18	2100	7945
Walker 19	4000	7945
General Pet. Corp., Santa Fe 234	900	7455
O. J. Rohde, No. 3	3000	7170
Standard Oil Co., Koontz 9	2700	7945
SOUTH MOUNTAIN—		
The Texas Co., Harvey 26	100	3110
VENTURA—		
Associated Oil Co., Lloyd 107	3100	7297
McGonigle 7	600	6900

OKLAHOMA

Company, Well and Loctaion	Initial Production Bbls.	Depth
COTTON COUNTY—		
Wirt Franklin, Chamber 2, se ne sw se, 35-1s-10w	220	2167
Barnsdall, Lawler 5, sw nw se, 33-1s-10	15	2148
CREEK COUNTY—		
Tidal Oil, Keys 2, sw ne nw, 28-17-7e	50	2855
R. O. Bailey, Fulson 6, sw nw sw, 13-17-10e	30	1930
The Texas, Baker 3, ne se se, 14-17-10e	60	1918
Pioneer, Jones 1, se ws ne, 18-17-10e	18	2239
Curtis, Sewell 1, ne se ne, 27-16-10e	¶10	2658
Bryan, Jackson 2, ne nw sw, 8-16-11e	15	2168
Turner Bros., Felix 1, nw sw ne, 9-16-12e	¶4	1990
Franchot, Mitchell 6, sw ne sw, 17-16-8e	50	3815
Atlantic, Bear 3, ne se nw, 16-14-10e	40	3337
Levine et al, Kimble 1a, nw se ne 33-15-10e	*	577
GRADY COUNTY—		
Meridian Gas Co., Kinnaird 1, cnl ne ne, 34-4n-8w	¶12	2180
GRANT COUNTY—		
Consolidated Utility Co., Secatt 1, c se sw, 35-28-3w	¶20	4127
HUGHES COUNTY—		
Burke-Greis Corp., Oliphant 1, (OWDD) se ne nw, 18-9-9e	175	3489
JEFFERSON COUNTY—		
McGinley & Sigler, Pfile 8, ne nw ne, 20-7s-5w	20	783
McGinley & Sigler, Pfile 10, nw se ne ne, 20-7s-5w	20	781
McGinley & Sigler, Pfile 9, ne sw ne ne, 20-7s-5w	20	782
KAY COUNTY—		
Marylene, School land 3, nw se nw, 16-27-1w	*	3785
KIOWA COUNTY—		
George Eshelman et al, Foster 2, nw ne sw nw, 18-6n-16w	10	420
LINCOLN COUNTY—		
Shaffer et al, Connell 2, cel sw, 31-17-5e	10	4247
MUSKOGEE COUNTY—		
Metzger et al, Townlot 1, se nw nw, 35-15-18e	*	1120
E. D. Glasco et al, Dean 1, sw ne nw, 7-13-18e	*	2385

SUMMARIZED REVIEW OF FIELD RESULTS

State —	Completions This week	Completions Last week	Producers This week	Producers Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	14	3	9	1	..	..	5	2	592	1
California	28	27	24	25	..	..	4	2	39,900	34,250
Illinois	16	16	13	15	..	..	3	1	370	511
Indiana	2	2	2	..	..	2	..	..	40	...
Kansas	8	26	4	14	..	..	4	12	2,335	2,365
Kentucky	50	27	13	17	24	3	13	7	1,141	1,830
Louisiana	10	19	4	9	5	4	1	6	4,295	4,571
Michigan	16	12	11	5	..	1	5	6	2,332	490
Mississippi	1	..	..	..	..	..	1	..	...	...
New Mexico	..	2	..	2	..	..	..	..	...	190
Ohio	57	60	20	25	24	18	13	17	318	1,056
Oklahoma	71	92	50	56	10	7	11	29	36,537	35,313
Pennsylvania	11	96	4	87	4	5	3	4	30	257
Texas	217	127	130	60	15	10	72	57	25,443	29,585
West Virginia	23	..	5	..	15	..	3	..	150	...
Total	524	509	289	316	97	50	138	143	113,483	110,433
Increase this week	15	..	..	..	47	..	..	..	3,050	...
Decrease this week	..	..	27	..	..	..	5	..	...	...

Company, Well and Loctaion	Initial Production Bbls.	Depth
John Aggas, Wheat 1, se ne sw, 28-16-15e	7	1432
Johnston et al, Cowert 1, ne se nw, 23-13-18e	¶¼	702
OKFUSKEE COUNTY—		
Independent & Kingwood, Lowe 2, sw ne nw, 22-10-11e	*	1667
Grimes Gasoline Co., Alexander 1a, se ne ne, 35-11-9e	¶7	2928
Regal, Douglas 9, cnl se ne, 11-10-11e	25	2029
OKLAHOMA COUNTY—		
Mid-Kansas Oil & Gas Co. et al, Trosper 1, ne nw, 19-12-1w	660	6166
Indian Territory Illuminating et al, S. Bodine 1, nw, 30-11-2w	4298	6590
OKMULGEE COUNTY—		
Tiger Mountain, Fowler 13, (OWDD) sw se se, 35-14-14e	*	1906
J. H. Rebold, Brooks 2, cnl sy ne, 6-15-13e	35	2557
Mechlin & Berlin, Chatman 1a, swl sw nw, 13-14-14e	6	1077
F. D. Misener, Colbert 3, cel se nw, 14-14-14e	8	1098
J. L. Selby, Anderson 35, cel ne nw, 35-14-14e	10	1140
OSAGE COUNTY—		
Winona, 13, nw sw sw, 22-29-11e	5	988
Indian Territory Illuminating, 414, nw se nw, 26-27-11e	¶3½	1907
Kay County Gas, 8 "B," se ne sw, 22-24-7e	¶13	2552
PAWNEE COUNTY—		
Bert Swift, Smelzer 5, ne se nw, 35-20-9e	75	2076
J. H. Markham, Hull 6, ne nw ne, 23-21-7e	10	1460
PONTOTOC COUNTY—		
Transcontinental, Bolen 2, ne sw nw	2130	2289
Benedum & Trees, Mathews 1, ne se, 31-5-5e	165	2670
Benedum & Trees, Coker 1, sw nw nw, 31-5-5e	150	2650
Empire, Norris 2, se nw, 19-5-5e	125	2385
POTTAWATOMIE COUNTY—		
Shell, Jordan 2, nw sw nw, 9-8-5e	1110	4063
Gypsy, Green 3, ne se, 17-7-4e	525	3980
Gypsy, Green 4, ne nw se, 17-7-4e	340	4170
Shell, Hines 1, ne sw nw, 22-7-4e	2030	4178
SEMINOLE COUNTY—		
Signal, Bond 2, nw sw ne, 13-6-7e	*	4161
Gypsy, Peters 2, ne se ne, 23-5-7e	830	4114
Gypsy, ePters 3, sw se ne, 23-5-7e	325	4143
Indian Territory Illuminating, Hotalka 1, nw se se, 7-6-8e	860	4154
Signal, Bond 4, se sw ne, 13-6-7e	2125	4153
Sinclair, Phillips 4, nw se se, 4-7-7e	1630	4352
Sinclair, Phillips 2, ne se, 5-7-7e	3415	4193
The Texas, Chilcoat 1, sw nw, 4-7-7e	1135	4210
Magnolia, Reed 2, sw ne, 4-8-7e	45	3281
W. B. Pine, Harjo 4, se sw se, 6-8-6e	720	4348
Sinclair, Harjo 4, nw se se, 11-8-5e	250	4268

Company, Well and Loctaion	Initial Production Bbls.	Depth
Carter, Wrightsman 1, nw ne ne, 19-9-6e	8380	4211
Gypsy and Devonian, Payne 2, ne se, 18-9-6e	1060	4287
Burke-Greis Jones 1, nw sw sw, 17-9-6e	2880	4270
Carter, Winner 1, sw ne, 16-9-6e	100	3559
Barnsdall et al, Gilliam 1, se ne se, 13-9-5e	295	4242
STEPHENS COUNTY—		
Pace et al, Johnson 1, se nw, 21-2s-7w	*	2221
Lesh & McCall, Wilson 1, se sw sw ne, 17-2s-7w	*	2300
Wirt Franklin, Brookes 1, se ne, 8-2s-6w	¶20	2991
WAGONER COUNTY—		
R. Kenworthy, Brown 1, ne se nw sw, 25-16-17e	*	910
Cherokee Public Service Co., Smith 1, ne nw sw sw, 36-16-17e	*	1085
James Sewell et al, Denton 1, ne se sw, 13-17-15e	20	1074
TULSA COUNTY—		
Bessinger et al, Fox 1, sw nw ne, 14-16-13e	¶6	1563

KANSAS

Company, Well and Loctaion	Initial Production Bbls.	Depth
ELLIS COUNTY—		
Barnsdall, Johnson 1, ne sw, 9-13-19w	205	3605
RUSH COUNTY—		
Sinclair, Seusser 1, se nw nw, 8-18-17w	*	3840
SEDGWICK COUNTY—		
Bu-Vi-Bar et al, Wright 8, nw ne ne, 12-26-1w	510	3375
Shell, Fischer 2, se ne se, 15-26-2e	420	3200
Shell, Brown 2, sw ne se sw, 15-26-2e	1200	2910
Johnson and Marshall et al, Roy 1, ne se sw, 23-29-1w	*	3856
Ramsey et al, Evans 1, 2-26-1w	*	3065
Twist et al, Rayburn 1, nw sw se, 4-25-1w	*	1980

ARKANSAS

Company, Well and Loctaion	Initial Production Bbls.	Depth
OUACHITA COUNTY (Smackover)—		
Magna Prod. Co., Linihan B-7, 36-15-16	17	1999
Skelly Oil Co., Wood 3, 34-15-15	350	2004
Standard Oil Co. of La., Arnold B-12	45	2052
Texas Co., Berry 11, 33-15-15 (second completion)	3	1995
Texas Co., Wright 1, 2-16-15 (second completion)	5	1985
UNION COUNTY (Smackover)—		
Ramage, James 11, 6-16-15	24	1984
Shell Pet. Corp., Hardy-Murphy 3, 9-16-15 (second completion)	10	2310
UNION COUNTY (Champagnolle)—		
Magna Prod. Co., Rowland C-1, 14-17-14 (second completion)	110	3006

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BEAVER COUNTY—		
J. L. Abrams, Young 1	¶½	....
W. A. Sapp, Sapp 1	¶¼	....
Geo. W. Deason, Conkle	*	....
Unknown Parties, Kaylor 1	*	....
CRAWFORD COUNTY—		
Kahle & Kahle, Andrews 1	3	600
ALLEGHENY COUNTY—		
Glenshaw Oil Co., Uehl 1	5	....
Reserve O. & G. Co., Dawson 5	2	....
Butchers Oil Co., Clendenning 7	*	....
GREENE COUNTY—		
James Null & Co., Null 2	¶½	....
Carnegie Nat. Gas Co., Iams 2	¶½	....
BUTLER COUNTY—		
Phillips Gas & Oil Co., McFarland 4	20	....

WEST VIRGINIA

CABELL COUNTY—		
United Fuel Gas Co., Sowards 2942	¶1	....
McCallister 3943	¶¼	....
Penn Nat. Gas Co., Keaton 1	¶1	....
Beckett 1	¶¼	....
Larne Gas Co., McGraw 1	¶¼	....
W. Va. Gas Corp., Swain 1	¶1	....
ROANE COUNTY—		
South Penn Oil Co., Stockley 102	20	....
Nixon 11	15	....
United Fuel Gas Co., Brown-Swan 3929	2	....
Laughlin 3989	¶1½	....
GILMER COUNTY—		
Golden Gas Co., Miller 1	3	....
South Penn Oil Co., Ellis 4	110	....
Carnegie Nat. Gas Co., Rymer 2	¶2	....
BOONE COUNTY—		
Owens Bottle Machine Co., Powell 1	¶1¼	....
Hope Nat. Gas Co., Allen 7243	¶1	....
Osborne Dev. Co., Roberts 1	¶¼	....
LINCOLN COUNTY—		
United Fuel Gas Co., Miller 3909	¶½	....
Horse Creek Land 3898	¶½	....
RITCHIE COUNTY—		
W. Va. Utility Co., Barker 1	*	....
Eastern Prod. & Refg. Co., Rutherford Hrs. 23	¶¼	....
WIRT COUNTY—		
Roberts Bros., Rathbone 151	2	....
WOOD COUNTY—		
C. S. Reed, Reed 12	*	....
PLEASANTS COUNTY—		
T. H. Smith & Co., Noah Bros. 1	*	....

KENTUCKY

WARREN COUNTY—		
W. H. Martin & Co., Lockhart 1	*	541
JOHNSON-MAGOFFIN COUNTIES—		
Hamlin-Tanner Oil Co., Tackett 5	5	....
LEE-OWSLEY COUNTIES—		
Superior Oil Corp., Calmes-Park 4	3	....
WOLFE COUNTY—		
Garrison Bros. & Co., Roberts 4	1	....
WAYNE COUNTY—		
Wm. O. Southern, Jr., Jones & Co. 10	25	....
George A. Hook, Bertram 13	*	....
DAVIESS COUNTY—		
Dahlgren & McMahan, Fuqua 1	60	....
The Petroleum Co., Burns 18	*	....
H. C. Smith Oil Co., Montgomery 1	*	....
OHIO COUNTY—		
Hupp & Duff, Mason-Bartlett 4	200	....
Mason-Bartlett 5	600	....
Cumberland Pet. Co., Wade 5	200	....
Wade 3 and 4	*	....
S. R. Nigh & Co., Kelly 11	10	....
Claypool & Co., Ralph 14	10	....
Weir & Stewart, Norris Hrs. 8	10	698
Norris Hrs. 9	15	420
J. C. Ellis & Co., Bartlett 2	*	....
Moseley 9	*	....
Snowden-McSweeney, Mangan 2	*	....
ALLEN COUNTY—		
W. P. Harley, Gibson 2	2	330
Sturm & Pearson, Ewing 12	*	290
J. T. Finch, Superior 10	*	374
Mid-Southern Oil Co., E. H. Woods 28	*	304

SOUTHEASTERN OHIO

NOBLE COUNTY—		
Dora Staudt & Co., Warner 8	¶¼	1695
Local Oil Co., Mallett 9	*	1120
WASHINGTON COUNTY—		
Sheets Run Oil Co., Jones Hrs. 2	¶¼	....
Penn Grit Oil Co., Dennis-Hughey 1	¶¼	1748
MONROE COUNTY—		
Eastern O. & G. Co., Baker 11	60	1261
James Wittenbrook & Co., Friday 6	10	1505
Frank Ward & Co., Burkhart 8	3	860
Shay McMullen, Wilson 3	2	1822
Wittmer O. & G. Co., Eggensperger 1	2	1817
Ohio Fuel Gas Co., Carpenter 1	¶¼	1822
Sylvania Producing Co., Winland 1	¶¼	540
Albert Hayes & Co., Hartshorn 3	¶¼	1432
Penn Ohio Oil & Gas Co., Brineon 1	¶¼	1848
W. C. McBride, Inc., Hogan 1	1	1331

CENTRAL OHIO

ASHLAND COUNTY—		
Ohio Fuel Gas Co., Seibert 1	3	....
Kauffman 1	¶½	....
Ohl 1	*	....
East Ohio Gas Co., Hay 1	¶¼	2841
Kemrow Co., Evil 1	¶4	2523
Emmons 1	*	2538
Robinson & Co., Heffelfinger 4	30	766
LICKING COUNTY—		
Ohio Fuel Gas Co., Weaver 1	20	2719
Emerald Pet. Co., Cochran 1	10	765
Little 6	10	2882
Hope Construction & Refg. Co., Wright 2	3	613
PERRY COUNTY—		
Ohio Fuel Gas Co., Brown 1	¶¼	3580
Kisling Drilling Co., Clark 6	¶¾	727
J. Elders & Co., Clark 3	¶1¼	....
Trinway Oil & Gas Co., Glass 1	¶¼	....
SUMMITT COUNTY—		
East Ohio Gas Co., Franks 1	*	....
Diehl 1	¶1½	4082
Harring 1	¶3	3596
Baum 2	¶1½	3996
ATHENS COUNTY—		
Chas. Fox & Co., Bean 5	*	125
Orondorff & Co., Linscott 9	*	1370
Ohio Fuel Gas Co., Gates 1	*	1699
LORAIN COUNTY—		
Ohio Fuel Gas Co., Clark 1	¶2¾	....
Daugherty & Co., Wesley 1	¶8	....
PIKE COUNTY—		
A. & P. O. & G. Co., Hines 1	¶¼	435
Shy 1	¶¼	435
COSHOCTON COUNTY—		
George Jewell & Co., Allhouse 1	*	3383
Emerald Pet. Co., Miller 1	*	3391
HOCKING COUNTY—		
Hope Construction & Refg. Co., Marks 3	52	2791
JACKSON COUNTY—		
Ohio Fuel Gas Co., Stiffler 1	¶2½	2668
WAYNE COUNTY—		
Harmon & George, Schmidt 3	¶1	3112
B. Slagel, Eusey 1	¶½	603
MEDINA COUNTY—		
Ohio Fuel Gas Co., Gunkleman 1	*	....
ASHTABULA COUNTY—		
Schaeffer Bros., Ring 1	*	....
KNOX COUNTY—		
Upham Gas Co., Clements 1	*	2481
LAWRENCE COUNTY—		
Ohio Fuel Gas Co., Queen 1	*	3008

NORTHWESTERN OHIO

SENECA COUNTY—		
W. J. Poyser & Co., Martin 2	50	1638
Saul 3	10	1650
Ohio Oil Co., Yingling 1	1	....
ALLEN COUNTY—		
Neely & Nolan, Bassett 7	25	1375
HANCOCK COUNTY—		
Star & Clark, Stauffer 14	20	1370
AUGLAIZE COUNTY—		
Frank Wahrer, Wahrer 6	5	1228
OTTAWA COUNTY—		
Peninsula Oil Co., Neal 1	1	1947

INDIANA

PIKE COUNTY—		
H. C. Darby & Co., Stewart 3	25	1325
ADAMS COUNTY—		
G. S. Lackett & Co., Baker Hrs. 1	15	....

ILLINOIS

CRAWFORD COUNTY—		
Phipps & Cawood, Tohill 14	7	973
Dinsmore Oil Co., Hughes 24	3	965
CLARK COUNTY—		
Turner Oil Co., Hartman 19	2	545
W. C. McBride, Inc., Short 19	*	530
ST. CLAIR COUNTY—		
St. Clair County Oil Co., Hall-Wallace 1	75	546
C. C. Bundy, Trustee, Hankamer 1	30	546
Dupo Oil Investment Co., Jackson 1	25	527
Joseph May, Lutten 3	*	537
Paul J. Campbell & Co., Bucklin-Wright 1	40	540
Coleman & Smith, Fullerton 1	45	540
Clarence Roques & Co., Showman 1	40	530
Abbott & Co., LaCroix 1	*	1065
Bingham & Abbott, Osick 1	35	541
Ohio Oil Co., Dyroff 11	40	553
Gorman & Weihl, Muller 1	8	667
Moody & Seagraves, Hamil-Bachelor 2	20	560

MICHIGAN

MIDLAND COUNTY—		
Shuler & Hart, Histe 1	*	3815
Sun Oil Co., Doyle 1	*	....
ISABELLA COUNTY—		
Pure Oil Co., State-Isabella B-1	300	3565
Reems A-3	300	3575
Reems A-5	*	....
Fox 2	300	3776
Fox 3	15	....
Thompson 2	100	....
Ohio Producing & Refg. Co., Bradley-Hall 2	725	....
Bradley-Hall 3	15	....
Ohio Producing & Refg. Co., Shepard 1	*	3785
Mt. Pleasant O. & G. Co., Morrison-Bortz 1	150	....
Thompson-Bortz 1	12	3594
Sias Oil Dev. Co., Brown 1	250	3575
J. Brown 1	165	....
Athens Oil & Gas Co., Myers 1	*	....

NORTH LOUISIANA

BOSSIER PARISH—		
Palmer Corp., Hodges B-13, 25-16-12	¶1	1908
OUACHITA PARISH—		
Pipes & Mack, Schhultz 2, 13-18-4e	¶1	2223
RICHLAND PARISH—		
W. C. Feazel, Haynes & Vincent 1, 17-16-6e	¶19	2460

SOUTH LOUISIANA

HACKBERRY—		
Yount-Lee Oil Co., Carter & Sweeney 1	1050	3244
LOCKPORT—		
Shell, Miller 1	*	7201
SULPHUR—		
Union Sulphur Co., Fee 750	1100	3333
Fee 751	2000	3636

TEXAS

SOUTHWEST TEXAS

SALT FLAT—		
Humble, F. Gray 10-A	75	2700
Johnson 6	75	2690
Dye 8	300	2700
Luling O&G Co., Carter 1, wo	*	2870
BEXAR COUNTY—		
Hamilton & Kennon, V. E. Hamilton 1, F. R. Hernandez sur.	*	1750
BROOKS COUNTY—		
Houston Oil, Lassiter 1, Realtos subdiv., Copita Farm & Garden tr. No. 69, blk 11	¶25	4120
DUVAL COUNTY—		
Magnolia, Corbett 1, sur. 96	*	4912
JIM HOGG COUNTY—		
W. R. Shankle, Holbein 2, H-W-F pool	55	2155
VAL VERDE COUNTY—		
Producers Oil Co., of Okla., Everett Bros. 1	*	2526
WEBB COUNTY—		
Foster Barnsley, Webster 6, sur 684, Carolina-Tex.	50	2619
Magnolia-Houston Oil, Benavides 2	¶30	....
ZAPATA COUNTY—		
Killam & Duggan, Cuellar 7, Sur. 684, H-W-F pool	150	1600
Buck & Coursey, Garza 2, S. Jennings, Comitas Gt. Blk. 47	*	936

EAST TEXAS

HARRISON COUNTY—		
Nick Barbare, Abney 1, J. J. Blair sur.	¶1	2388
C. H. Lyons et al, State Line-Furrh A-2, J. Lipscomb sur	¶1½	2378

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY		
Adams & Waller, Adams 8, E, Jones sur	¶1½	971
Magnolia Pet. Co., Leigh-Trosper 1, Stephenson sur	*	2690
D. Thomason, Tillery 1, Jane Thorpe sur	¶1½	2355
SHELBY COUNTY—		
Gulf, Addie Carraway 1, G. H. Patterson Hrs.	*	6580
UPSHUR COUNTY—		
Amerada, Wade 1, J. H. Fields sur	*	6153
COMPLETIONS		s
EAST CENTRAL TEXAS		
BOGGY CREEK—		
Humble, Neches River 2	*	3781
Southern Pine 4-A	*	4730
FALLS COUNTY—		
Killam & Phillips, C. A. Jones 3, Sanchez Sur.	*	1712
TEXAS GULF COAST		
BABERS HILL—		
Sun Oil Co., Wilburn Fee 1	300	5409
McKinney 1	300	5450
Yount-Lee Oil Co., Woodward 2	1900	5340
BOLING—		
Vacuum, Taylor 3	*	4088
BLUE RIDGE—		
Cunningham Prod. Co., Blakely 2 dd	30	2790
HIGH ISLAND—		
McLean Oil Co., Cade 15	780	4040
HULL—		
Gulf, Phoenix Dev. Co. 45, dd	550	3330
Republic Prod. Co., Dolbear 99, dd	1000	2390
Houston Prod. Co., Barngrover 13	1150	3820
HUMBLE—		
West Prod. Co., Foster Lbr. Co. 1	1600	4936
GOOSE CREEK—		
Humble, Simms-Smith 75	*	6277
Chicago Oil Corp., Jones 1	*	2590
Newton & Lillie (Turnbow Oil Co.), Schilling 3	50	1805
ORANGE—		
Brownie-Babette Oil Co., McLean 7 dd	300	3660
PIERCE JUNCTION—		
Anderson & Plummer, Whitehead 5, dd	*	4480
PORT NECHES—		
The Texas Co., Stark 1	1680	3173
RACCOON BEND—		
Humble-Valley, Mueller 3	275	3407
Urban 4	200	3237
REFUGIO—		
Houston Oil Co., Fannie Heard 6, wo	¶50 & 20	3695
Wilson Heard 8	500	3686
Korona Oil Co., West 1	600	3671
Reilly 2	135	3675
Saxet Oil Co., Fox Hrs. 1	600	3674
Houston Gulf Gas Co., Vance 1	400	3701
SOUTH LIBERTY—		
Empire, Groggan 4	*	3500
SPINDLE TOP—		
Yount-Lee Oil Co., McFaddin 114	*	4555
SUGARLAND—		
Humble, Hammer Fee 6	450	3618
WEST COLUMBIA—		
Saxet Oil Co., W. C. Hogg 1	360	3450
Masterson 1	65	1650
TEXAS PANHANDLE		
CARSON COUNTY—		
Cities Service Gas Co., Burnett 19	¶26	2535
G. W. Deahl 1	¶15	2869
W. H. Fuqua 1	¶23½	2760
GRAY COUNTY—		
Danciger O. & R. Co., H. K. Beck 5	1070	2857
Dye-Gillett et al, Noel 1	120	3285
McMan O. & G. Co., G. H. Saunders 3	100	2828
Phillips Pet. Co., Palmer 7	175	2904
The Texas Co., Cook-Faulkner 4	2000	2823
HARTLEY COUNTY—		
Canadian River Gas Co., Bivins 11-A	*	4949
HUTCHINSON COUNTY—		
Phillips Pet. Co., Johnson-Katz 1	1500	3035
MOORE COUNTY—		
Phillips Pet. Co., J. C. Wilson 1	¶42	3450
Skelly Oil Co., Armstrong-Byrd 10	225	3183
WHEELER COUNTY—		
Magnolia Pet. Co., Lulu Laycock 1	¶8½	2329
Martin & Debous, J. Pitsch	¶25	1817
Murchison-Fain & McGaha, I. Close 3	40	1575
Osage Dev. Co., J. D. Purcell 1	¶12	1891
Hal Vaughan et al, M. Ackley 5	¶40	1864

CENTRAL WEST TEXAS

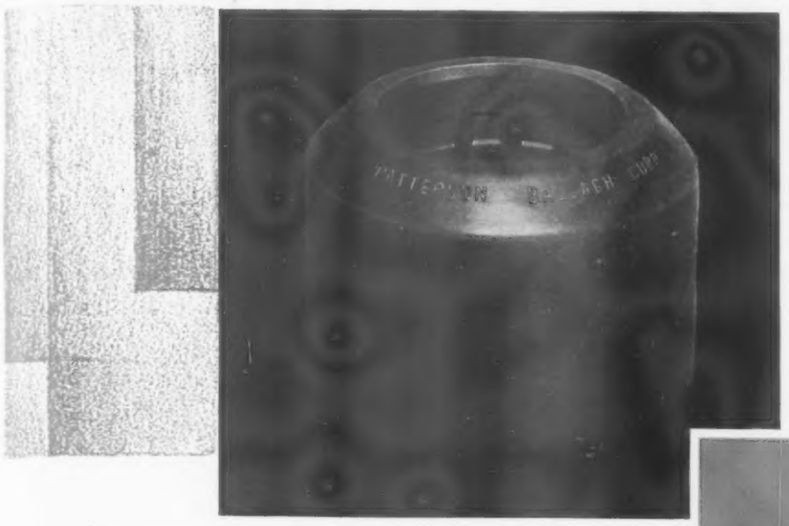
Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
American-Maracaibo Co., Bush 18	9	1128
Bearman et al, Miller 5	30	1098
Buder et al, Munselle 4	25	1167
A. B. Gordon et al, Whiteside 1	†	880
Humble O. & R. Co., Johnson 1	25	1311
Lloyd Oil Corp., Henderson 1	*	980
Prairie O. & G. Co., Reaves 1	*	1350
Williams 11	*	1220
E. L. Smith Oil Co., Kessler 1	25	1317
Trueheart 4	25	1138
The Texas Co., Kessler 7	330	1323
Venmex Oil Co., Hickman 7-D	20	1286
CALLAHAN COUNTY—		
McClanahan & Eastland Oil Co., Powell 1	*	1303
COLEMAN COUNTY—		
Broderick & Calvert, Weaver 3	*	1873
Charter Oil Co., Crump 5	*	1875
Mid-West Explo. Co., Burch 1	*	2033
Morrison-St. John et al, Young 1	*	1970
S. B. Owens, Inc., Curry 1	*	1342
Rex-Tex & Py-Tex Oil Co., Baker 2	10	1387
Stepp & Keister, Moody 5	*	1872
White Eagle O. & R. Co., Morris 6	450	2042
Morris 8	150	2030
EASTLAND COUNTY—		
Dyar Bros. et al, Cunningham 2-B	*	4100
Chestnut-Smith Corp., Alexander 1	¶1 & 50	3464
PARKER COUNTY—		
W. P. Chancellor et al, Womack 1	*	2097
SHACKELFORD COUNTY—		
Ackerman & Scrivner, Hill 1	*	770
A. J. Hughes et al, Davis 1	*	1753
Humble & Roeser-Pendleton, Inc., Titus 1-C	5	489
J. K. Simmons et al, Harvey 1	*	1901
H. Slicker et al, Matthews 5	5	1140

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Barnsdall Oil Co., Wilson 1-D	60	1715
Falls County Fee 3	15	1135
L. T. Burns et al, Harris 1	*	1518
Bull Heydrick & E. J. Stump, White 1	*	1727
Kembrow Prod. Co., Campbell 8	5	709
C. B. Long-Texas Co., Dominey 1	*	1507
M. & V. Oil Co., Kunkel 1	60	1161
Pandem Oil Corp., Hausler 1	*	1200
Petroleum Prod. Co. et al, Kunkel 10-B	100	1138
Shappell Oil Co., Lyles 11	15	1708
BAYLOR COUNTY—		
Grisham et al, Portwood 1	*	1414
BURKBURNETT—		
Ascot Co., Roller 46	2	300
Roller 47	3	290
Roller 48	2	284
J. M. Hemby et al, Duke 1	*	351
Duke 2	3	177
Duke 3	3	180
Duke 4	2	178
COOKE COUNTY—		
Danciger O. & R. Co., Huggins 8	140	1141
Humble O. & R. Co., Poteet 6	40	1503
ELECTRA—		
Akin & Rayzor, Burnett 2	*	725
L. L. Donnell et al, Honaker 1	*	1680
T. F. Hunter et al, Waggoner Bros. 2-C	50	1494
Waggoner 7-C	55	1489
Waggoner 8-C	20	1483
Magnolia Pet. Co., Allen 53	*	1071
Panhandle Ref. Co., Burnett 9-A	25	1435
Burnett 10-A	*	1458
J. G. Rowe et al, Waggoner Bros 3	*	1492
Sheldon & Venmex Oil Co., Whittenbach 2	20	1942
Turman Oil Co., Waggoner 15	45	1576
JACK COUNTY—		
Prairie O. & G. Co., Bryson 2	*	4835
K-M-A & IOWA PARK—		
Balyeat et al, Warren 1	*	621
F. Blair et al, McClure 1	20	950
R. R. Clark et al, Kennedy 1-A	5	1900
Comac Oil Co. & Prairie, Bishop 10	50	1787
Continental & Petroleum Prod. Co., Love 2	*	204
John A. Dixon et al, Logan 1	*	1902
Ben M. Griswold et al, Dutton 1	*	765
Kimbrell & Bostic, W. E. Crow 8-A	5	1055
Geo. W. Maywood et al, E. McBurney 2	5	865
E. McBurney 3	2	968
Mogren & Anderson, Goetze 1	10	828
Goetze 2	*	829
Goetze 3	*	1019
Goetze 4	*	830
Goetze 5	*	827
Goetze 6	*	504
Goetze 7	4	836
Goetze 8	4	422
Goetze 9*	3	830
Goetze 10	20	826
Goetze 11	10	452
Goetze 12	10	460
Goetze 13	8	471
Goetze 14	5	465
Goetze 15	5	468
Goetze 16	4	490
Goetze 17	3	500
Goetze 18	3	184
W. B. Omohundro et al, Pace 23	30	1780
Rubsam & Hunter, McClire 17	9	1029
Rubsam-Hunter et al, McClure 12-B	*	2016
Star Drlg. Co., Crudup 1-B	75	1820
J. L. Swanner et al, B. Parker 1	*	1282
United Prod. Co. et al, Allen-Kemp 3-F	35	1753
White Bros. & Jackson, Mitchell 8-B	80	1302
Mitchell 9-B	100	1302
MONTAGUE COUNTY—		
Bridwell Oil Co., Edmondson 8	45	1265
Reynolds Drlg. Co., Bryant 1	*	2518
WILBARGER COUNTY—		
Empire Gas & Fuel Co., Waggoner 12-A	150	2307
Waggoner 21-B	220	2300
Waggoner 22-B	200	2305
Waggoner 14-C	150	1895
Waggoner 15-C	115	2374
Fain-McGaha Oil Corp., Waggoner 8-L	80	2308
Waggoner 10-W	100	2410
Golding & Cochran, Waggoner 2-K	*	1940
Waggoner 1-L	*	1930
Grayback Dev. Co., Waggoner-Jones 1	*	1969
Harris et al, Waggoner 1, (Sec. 22)	*	1947
Lewis Prod. Co., Waggoner 11-A	50	2409
Waggoner 6-B	*	2480
Robert Oil Corp., Waggoner 2	70	2408
Staley-Wynne & Co., Waggoner 6-B	85	1890
Waggoner 2-R	70	2432
Melton 1	*	2451
E. P. Waggoner et al, Waggoner 2	75	2451
Waggoner 3	*	2551
Waggoner Ref. Co., Waggoner 10-J	*	2453
Waggoner 11-J	105	2431
YOUNG COUNTY—		
Allday Oil Corp., Clark 1	*	574
Bridwell Oil Co., Cullers 1	10	574
Cullers 2	30	624
Continental Oil Co., & Underwood, Campbell 3	35	905
Fowler et al, Hill 1	45	1045
Holbrook & Woods, Dean 3	9	545
Panhandle Ref. Co., Farmer 1	*	852
Prideaux 1-D	10	732
Prideaux 2-D	80	733
Perkins & Cullum, Lemmond 3	190	725
Paull Oil Co., Allen 7	20	2232
Riggs & Williams, Shatto 1	*	603
The Texas Co. et al, Bailey 1	*	650

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Simms Oil Co. & Atlantic, University 10-A	160	3040
HOWARD COUNTY—		
Bristow & Merrick, Hooks 9	75	1955
Shell Pet. Corp., Settles 1-B	600	2954
PECOS COUNTY—		
Continental Oil Co., University 2-A	200	996
REAGAN COUNTY—		
Big Lake Oil Co., University 167	50	3083
University 168	100	2985
University 169	100	3102
University 170	175	2422
University 172	175	2423
University 173	100	2889
WINKLER COUNTY—		
Shell Pet. Corp. & Llano Oil Co., Scarborough 7	105	3371



NEW

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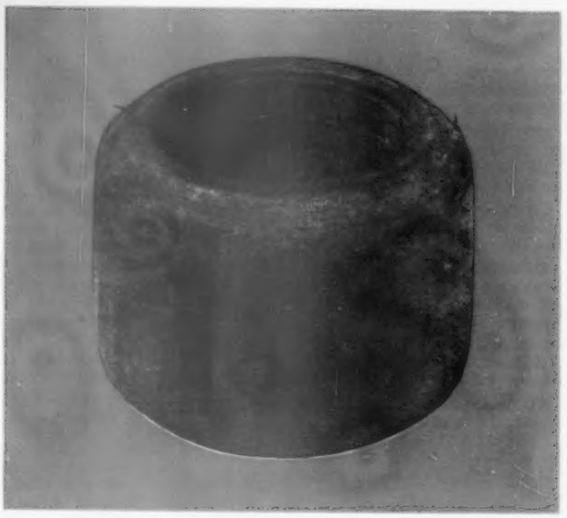
Protector used in six wells after 5000 hrs. of actual drilling service.



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PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending Oct. 5	Previous Week	Total this Month	Total this Year	This Week 1928	This Month 1928	1928 Year Total
Arkansas	4	4	4	124	..	..	331
California	31	25	31	994	26	26	1,207
Louisiana	18	26	18	674	8	8	680
Kansas	10	22	10	849	7	7	1,032
Oklahoma	67	121	67	2,737	89	89	3,744
Texas	141	172	141	6,738	172	172	8,297
Total	271	370	271	12,116	302	302	15,291

OKLAHOMA

COMANCHE COUNTY — Floyd Cooper, Hallum 1, c se sw, 3-3n-10w.

COTTON COUNTY—Bi-State, Lindsey 1, sw, ne nw, 34-1s-10w. Wirt Franklin, Powell 1, se nw 35-1s-10w. Shasta, Slogan 4, se, ne nw ne, 2-2s-10w.

CREEK COUNTY — The Texas, Baker 4, cel ne se 14-17-10e. Pionerr, 1, c nw se, 18-17-10e. Kurell, Crabtree 4, ne nw ne, 12-17-11e.

HUGHES COUNTY—W. B. Pine, Welch 2, sw se ne 6-8-9e. Independent Oil & Gas, Walker1, c sw nw 12-7-8e.

JEFFERSON COUNTY—McGinley and Sigler, Ufile 12, nw ne ne nw, 20-7s-5w. McGinley & Sigler Pfile 11, sw, nw se ne 20-7s-5w. Simpson and Fell, Seay 1, nw, ne sw ne, 3-7s-5w.

KIOWA COUNTY—I. D. Flanery, sw, Reneau 1, 25-6n-18w.

LINCOLN COUNTY—Magnolia, Decker 2, sw, se, 8-14-4e. Magnolia, Staubus 3, nw sw se, 8-14-4e. Shell Petroleum, Pharris 1, ne nw, 21-13-6e.

LOGAN COUNTY—Wentz, Williams 4, sw nw ne, 31-19-4w.

MUSKOGEE COUNTY—H. D. Johnston et al, Jordan 2, ne, 23-13-18e. Mack Drlg., Richards 1, c sw ne, 33-16-15e.

OKFUSKEE COUNTY—T. C. Iglehart et al, Barnett 1, ne se nw, 28-9-10e. Superior, Buick 1, nw ne ne, 29-9-10e. McCulloch et al, Catlett 1, ne se, 30-10-11e.

OKLAHOMA COUNTY—Wirt Franklin et al, Eacock 1, ne, 11-11-3w. Wirt Franklin et al, Theimer 1, se, 2-11-3w. Indian Territory Illuminating et al, Trosper 1, nw, 18-11-2w. Indian Territory Illuminating, Barker-Drake 1, sw se se, 14-11-3w. Wirt Franklin et al, Lowery 5, nw, 12-11-3w. Cromwell & Wirt Franklin, Trosper 12, sw se se, 12-11-3w. Indian Territory Illuminating, Theimer 3, sw nw ne, 12-11-3w. Indian Territory Illuminating et al, Theimer 2, nw sw ne, 12-11-3w. Indian Territory Illuminating et al, Theimer 1, sw ne, 12-11-3w. Indian Territory Illuminating et al, Ferndale 1, ne se ne, 11-11-3w.

OKMULGEE COUNTY — Levine et al, Warner 1a, ne, se nw, 24-14-12e. Kirkland and Son, Barnett 2, se, ne se, 18-15-13e. Hennessey et al, Young 7, c nw se, 17-13-13e.

OSAGE COUNTY—Oklahoma Natural Gas Co., 1738, cnl se se se, 6-21-12e. Oklahoma Power & Water Company, 122, se, sw sw sw, 4-20-10e.

PAYNE COUNTY—Tidal et al, Edwards 1, c ne, 13-19-1w. Wood Oil Co., Curley Chief 2, se sw se 33-19-5e.

PONTOTOC COUNTY — Transcontinental, Bolen 4, sw nw nw 19-5-5e. Transcontinental, Bolen 5, nw, 19-5-5e. Dixie, Cotton 1, se, 13-5-4e.

POTTAWATOMIE COUNTY — Magnolia, Green 4, ne, nw, 20-8-5e. Shell, Jordan 3, se sw nw, 9-8-5e. Shell, Jordan 4, sw se nw, 9-8-5e. Gypsy Oil, Gossland 3, ne nw sw, 9-8-5e. Magnolia, Billington 4, (owd), sw ne nw, 22-7-4e.

SEMINOLE COUNTY—Blackwell, Hull 1, sw se se, 6-6-8e. Pure, Bates 5, sw ne ne, 13-6-7e. Carter, Harjo 1, nw ne se 13-6-7e. Magnolia, Coker 1, sw, se, 13-7-6e. Magnolia, Breme 2, nw ne ne, 8-7-7e. Amerada and Dixie, Fullerton 1, nw ne se, 19-9-6e. Magnolia, Panos 4, nw ne ne, 18-9-6e. Gypsy, Noble 4, ne nw ne, 18-9-6e. Burke Gries, James 4, se sw sw, 17-9-6e. Shell, Hopper 6, se sw ne, 19-9-6e. Shell, Hopper 5, sw, ne, 19-9-6e. Shell, Hopper 7, sw se ne, 19-9-6e. The Texas, Magruder 3, se, nw, 19-9-6e. Carter, Powell 2, sw se sw, 17-9-6e.

STEPHENS COUNTY—Pandem, Barber 1, c se se, 34-2n-9w. Mudge, Gross 1, se nw sw, 15-1s-5w. Magnolia, Stephens 1, (OWDD) sw nw nw, 33-1s-8w. George Pace et al, Allen 4, nw sw nw ne, 3-2s-8w. Pace et al, Houston 4, sw ne sw, 2-2s-8w. Pace et al, Butler 1, nw sw, 35-2s-7w. McMeans, Koble 1, se nw nw, 30-2s-7w. Magnolia, Andrea 1, ne se ne, 8-2s-6w.

TILLMAN COUNTY—Riley et al, Riley 1, nw sw, 34-4s-14w.

WAGONER COUNTY—J. L. Dixon, Brown 3, csl sw nw, 36-16-17e.

KANSAS

ELLIS COUNTY — Davis, Hazlett et al, Weiland 4, sw ne ne 1-13-16w.

McPHERSON COUNTY—W. C. McBride et al, Voshell 2, se ne ne 9-21-3w.

ROOKS COUNTY—Stearns, Streeter et al, Livergood 1, sw ne 11-9-16w.

RUSSELL COUNTY—Kress, Haucke et al, Rockefeller 1, se 6-13-12w. Jmot Brown et al, Black 1, ne 70-14-15w.

SEDGWICK COUNTY—Lavender Oil Co., McLean 1, se sw se, 23-26-1w. Bu Vi Bar et al, Hudson "A" 2, ne nw ne 12-26-1w. Davis and Skelly, Wilson 14, nw ne 1-26-1w. Bu Vi Bar et al, Reed 5, se sw se 1-26-1w. Wentz et al, Alliston 1, ne nw 24-26-2e.

LOUISIANA

ACADIA PARISH — Yount-Lee Oil Co., Beaumont, Texas, Fee 1, 45-9s-2w, 1073 ft n and 1146 ft w of se c of Sec.

CADDO PARISH — Ray-Dawes Drlg. Co., Shreveport, Hunter Est. A-3, 9-19n-14w, 330 ft s and 330 ft e of nw c sw sw. Ray-Dawes Drlg. Co., Shreveport, A4, 9-19n-14w, 330 ft s and 330 ft w of ne c sw sw. Mr. Sam Sklar, Tr., Shreveport, Hunter Est. 3, 17-19n-14w, Apprx. 660 ft n and 660 ft w of se c sw ne. The Texas Co., Shreveport, Hunter Est. 4, 8-19n-14w, 990 ft n and 330 ft w of se c of Sec. The Texas Co., Shreveport, Hunter Est. 5, 9-19n-14w, 990 ft n and 272 ft w of se c sw.

CALCASIEU PARISH — Gulf Ref. Co. of La., Houston, Industrial Lbr. Co. 14, 19-9s-12w, 832 ft s and 1090 ft e of nw c ne se. Union Sulphur Co., Sulhpur, Fee 754, 29-9s-10w, 197 ft n and 353 ft e of center of Sec.

CAMERON PARISH — Calcasieu Oil Co., Magnolia Pet. Co. & Union Sulphur Co., Sulphur, Caldwell 4, 37-12s-10w, 2382 ft s and 2060 ft w of se c of Sec. 13 in Sec. 37. Calcasieu Oil Co., Magnolia Pet. Co. & Union Sulphur Co., Sulphur, La., Lempke 4, 36-12s-10w, 571 ft s and 1249 ft w of se c of Sec. 13 in Sec. 36. Rycade & Humble, Houston, Tex., Gulf Land Co. 4, 30-12s-10w, 700 ft s and 1400 ft e of nw c of Sec.

JEFFERSON DAVIS PARISH—Yount-Lee Oil Co., Beaumont, Tex., Geo. Courtney 1, 27-9s-5w, 873 ft s and 75 ft e of nw c of Sec.

LA SALLE PARISH—Air Lift Oil Co., El Dorado, Ark., Urania Lbr. Co. 5, 18-10n-3e, 300 ft n and 500 ft w of se c nw ne.

OUACHITA PARISH—New Process Car. Co., Monroe, La., Cole 2, Amended Permit, 35-20n-4e, 1971 ft e and 1820 ft n of sw c of Sec.

PLAQUEMINES PARISH—The Texas Co., Shreveport, State-Garden Island Bay 3, 107-23s-32e, 3600 ft s and 2650 ft w of ne c of Sec.

ST. LANDRY PARISH—Elbof Explorations of La., Inc., Eunice, Valmont Ledoux 1, 14-6s-2e, 1815 ft w and 960 ft n of center of Sec. Hebert-Baker Oil Co., Morrows, E. D. Fisher 1, 10-3s-4e, 1300 ft e and 754 ft n of sw c of Sec.

ST. TAMMANY PARISH—Washington & St. Tammany Drlg. Co., Franklinton, A. Cousack 1, 8-6s-10e, 200 ft n and 200 ft w of se c sw ne.

WEBSTER PARISH—Mr. Paul C. Warren, et al, Shreveport, T. A. Glass 1, 20-20n-9w, 305 ft n and 212 ft e of sw c of Sec.

ARKANSAS

OUACHITA COUNTY — Edwin M. Jones, El Dorado, Ark., H. P. Murphy 1, 325 ft s and 200 ft e nwc ne 2-16-15.

UNION COUNTY—B. F. Foster, El Dorado, Ark., Murph 1, 200 ft n and 320 ft e swc ne sw 35-15-16. Edwin M. Jones, El Dorado, Ark., Loutre Shingle Co., 430 ft e and 150 ft n sw c se nw 17-19-14. O. W. Estes, El Dorado, Ark., Ike Felsenthal 1, 330 ft s and 330 ft w nec ne nw 2-18-15.

TEXAS

ARCHER COUNTY—F. P. Cullum, Wichita Falls, L. R. Ellis, 100, 1, B 10, F.C.S.L. sur, 200 ft from w and 150 ft from s line B 10. Petroleum Prod. Co., Wichita Falls, A. M. Kunkel, B, 40, 10, S 3, B.B.B.&C. sur, 300 ft w of No. 8. Humble, Wichita Falls, O. L. Kunkel, 40, 8, S 3, B.B.B.&C. sur, 300 ft w of No. 7. I. E. Silkwood, Wichita Falls, R. D. Longley, 60, 1, J. B. Hinds sur, 150 ft from n and w lines. Hi Land Oil Co., Wichita Falls, J. H. White, 40, 1B, B 41, Amer. Trib. sur, 150 ft from s and 450 ft from w line Lot 2. Kemrow Co., Electra, C. A. Mangold, 195, 22, B 21, Lazarus sur, 300 ft nw of No. 11.

BROWN COUNTY — Texas Co., Wichita Falls, S. C. Kesler Co., 60, 7, S 42, H.&T.B. sur, 283 ft w of No. 6, sw¼. Greene Prod. Cor., Fort Worth, M. A. Davis, 40, 7, S 4, S.A.&M.G. sur, 450 ft from w and 150 ft from n line. Texas Co., Wichita Falls, S. C. Kesler, 60, 8, S 42, H.T.&B. sur, 300 ft w of No. 4; 9, 300 ft w of No. 7. Humble, Wichita Falls, H. C. Kilgore, A, 70, A8, J. Delgado sur, 900 ft from n and 200 ft from w line. E. L. Smith Oil Co., Mexia, L. A. George, 100, 9, S 42, H.T.& B. sur, 300 ft n of No. 7.

BEXAR COUNTY—Penn-Tex Oil Co. et al, San Antonio, K. May, 42 1, No. 134, F. 1. DeSaque sur, 150 ft from s and e lines.

BURLESON COUNTY—H. L. Griffin, Caldwell, O. Brinkman, 240, 1, D. Perry sur, 400 ft from e and 155 ft from n line.

BROOKS COUNTY—A. W. Dinn, Hebbronville, J. G. Ramos, 3, B 1, La Mestena sur, 2700 ft from e and 2100 ft from s line.

CALLAHAN COUNTY—Drew Beams, Okmulgee, Okla., I. N. Jackson, 320, 8B, S 14, E.T&N.O. sur, 1680 ft from n and 660 ft from e line sw¼; 7B, 1340 ft from n and 285 ft from e line sw¼. Ungren & Frazier et al, Putnam, C. B. Snyder, 40, 2, S 142, B.B.B.&C. sur, 300 ft e of No. 1; C. B. Snyder, 80, 7, S 6, T.&N.O. sur, 150 ft from w and 450 ft from s line; 6, 300 ft n of No. 2; 5, 300 f ts of No. 1; 4, 300 ft w of No. 1. Heist & Hart, Baird, J. S. Hart, 40, 1, S 7, D.&D. Asy. sur, 750 ft from w and 150 ft from s line nw¼ of nw¼. Moutray Oil Co., Abilene, J. D. Barclay, 80, 1, S 22, J. H. Pickens sur, 550 ft from w and 1320 ft from s line. E. Lilius, Abilene, I. W. Morgan, 40, 1, S 132, B 3, H.&T.C. sur, 654 ft from n and 150 ft from w line nw¼ sw¼.

COLEMAN COUNTY—Gutzman & Aldrich, Fort Worth, Hass, 21, 1, S 71, G.H.&H. sur, 150 ft from e and 750 ft from s line. W. A.

Gray, Coleman, G. M. Gray, 80, 1, S 174, T. A. Wharton sur, 150 ft from n and w lines. Meredith & Barton et al, Cisco, First Nat'l Bk., 60, 1, B 744, M. Lappe sur, 260 ft from nw and 200 ft from s line. White Eagle O. & R. Co., Abilene, J. P. Morris, 107, 30, W. M. Webber sur, 150 ft from s and w lines. Pacific O. & G. Co., Ranger, J. J. Crowder, 90, 1, S 483, J. H. Wood sur, 150 ft from n and 450 ft from e line. Amerada, Fort Worth, J. W. Harris, No. 156, S 8, J. Saunders sur, 3305 ft from w and 2504 ft from s line.

CARSON COUNTY — Shell Pet. Corp., Wichita Falls, F. E. Percival, 160, 1, S 199, B 3, I.&G.N. sur, ne corner.

CLAY COUNTY—Lone Star Gas Co., Petrolia, H. Wiist, 80, 23, B 17, P.C.S.L. sur, 988 ft from e and 150 ft from n line. Saxet Oil Co., Petrolia, Tipple Sands, 80, 4, B 15, P.C.S.L. usr, 150 ft from s and e lines of Lot 1; Stine, D, 35, 11, B 24, P.C.S.L. sur, 450 ft from n and 150 ft from w line.

COOKE COUNTY—Kewanee O. & G. Co., Tulsa, Okla., Burris, 85, 1, L. Pickering sur, 150 ft from s and e lines. Shell Pet. Corp., Dallas, Fields-Bower, 101, 7, G. Stanley sur, 450 ft from n and w lines. Danciger O. & R. Co., Fort Worth, J. F. Huggins, 76, 11, B 9, S.P. Ry. sur, 1650 ft from e and 450 ft from n line.

CRANE COUNTY—Humble, Wichita Falls, University, D, 160, D2, S 34, B 30, Univ. sur, 990 ft from w and 330 ft from s line nw¼. Republic, San Angelo, E. S. Hughes, 160, 1, No. 2, J. Prather sur, 990 ft from n and 1650 ft from e line of sur.

CHAMBERS COUNTY—McAlbert Oil Co., Houston, E. F. Woodward, 5, 3, W. H. Hodges sur, 90 ft w of No. 1. Humphreys Corp., Houston, A. Higgins, 14, 2, Wm. Bloodgood usr, 30 ft from n and 40 ft from w line.

DUVAL COUNTY—Magnolia Pet. Co., Dallas, A. Lundell, 160, 1, S 60, J. Poitevent sur, 300 ft s of No. 2; 2, 150 ft from n and e lines of se¼. S. & O. Oil Co., Houston, Bowe, 40, 5, S 250, B 21, Rosita sur, 150 ft from w and 300 ft from s line.

EASTLAND COUNTY — Conway Bros. & Champion, Ranger, J. W. Simmons, 160, 6, Mc-L.C.S.L. sur, 550 ft from n and 450 ft from w line Blk. 27. Jamison, Pollard & Forster, Coleman, J. E. Spencer, 40, 1A, S 29, B 3, H.&T.C. sur, 150 ft from w and 450 ft from s line. States Oil Corp., Eastland, S. N. Coon, 38, 3, S 27, B 2, H.&T.C. sur, 320 ft e of No. 2. Lucas, Islett & Pamiter, Cross Plains, H. L. Vestal, 183, 1, S. Damon sur, 330 ft from n and w lines.

ERATH COUNTY—Mingus Gas Co., Mingus, C. R. Alexander, 80, 1, B 19, J. M. Espinosa sur, 400 ft from e and 470 ft from s line B 1.

FALLS COUNTY—J. W. Hamilton, Waco, C. A. Jones, 364, 1, W. Hampton sur, 974 vs from n and 237 vs from w line.

GRIMES COUNTY—Lone Star Gas Co., Dallas, S. B. Freund, 345, 1, P. B. O'Conner sur, 200 ft from n and 330 ft from w line.

GUADALUPE COUNTY—Pagenkopf & Kennon, Inc., San Antonio, O. J. Halm, 81, 1, J. Kent sur, 150 ft from n and 1400 ft from e line.

GOLIAD COUNTY—Compton & Co., San Angelo, A. T. Fromme, 1, P. B. Dexter sur, 307 ft from n and 1050 ft from w line of sur. F. P. Zoch, Fort Worth, J. R. Kauffman, 160, 1, P. Trevino sur, 483 ft uw of center of se line.

GLASSCOCK COUNTY — Furhman Pet. Corp., San Angelo, L. S. McDowell, 80, S 24, B 34, T&P sur, 330 ft from s and e lines of w½ of se¼. Schermerhorn Oil Co., Tulsa, Okla., Phillips, 80, 2, S 23, B 33, T&P sur, 330 ft from n and 990 ft from e line.

HOWARD COUNTY—Godley O. & G. Co., Dallas, A. J. Hooks, 80, 2, S 140, B 29, W&NW sur, 460 ft n of No. 1.

HARRIS COUNTY—Navarro Oil Co., Houston, F. F. Dooley, 52, 17, B 16, J. Hamilton sur, 50 ft from e and 487 ft from s line. H. S. Smith, Inc., Houston, H. Ward, 7, 2, J. B. Jones sur, 450 ft nw of center of se line of Lot 7. Humble, Houston, V. L. Peterson, 151, 1, Wm. Littlefield sur, 50 ft from nw and ne lines. Woodburn 2, A. Whitlock sur, 3000 ft from w and 150 ft from n line. Simms-Smith, 76, Wm. Scott sur. J. Trahan, 1, W. W. Williams sur, 50 ft from nw and 505 ft from w line.

JACK COUNTY—R. H. Manning, Fort Worth, Brentmore, 26, 6, J. W. Williams sur, 300 ft e of No. 5. J. B. Baker, Jr., Wichita Falls, Kuykendall, 60, 1, I. Hughson sur, 200 ft from s and w lines. Panhandle Ref. Co., Wichita Falls, Eaton, 160, 2, I. Hughson sur, 240 ft from s and 270 ft from n line.

JEFFERSON COUNTY—L. W. Laughman, Beaumont, Gladys, 1, 2, B 32, Veatch sur, 50 ft from n and 40 ft from e line.

JASPER COUNTY—Marke Kleedon, Beaumont, R. B. Boykin, 300, 7, M. Raquite sur, 291 ft n of No. 4.

JIM HOGG COUNTY—A. W. Major, Laredo, R. Holbein, 14, 1, No. 3, B 6, Carscaden sur, 150 ft from n and 325 ft from e line.

KARNES COUNTY — Benedum-Trees Oil Co., Pittsburgh, Penna., S. A. Crews, 1, B. Odom sur, 340 ft from sw and 5260 ft from se line.

LIMESTONE COUNTY — J. R. Stroud, Groesbeck, Strather, 136, 2, W. G. McKenzie sur, 800 ft from w line.

MONTAGUE COUNTY—Bridwell Oil Co., Wichita Falls, E. E. Edmondson, 49, 9, T. R. Edmondson sur, 960 ft from s and 150 ft from e line. Archer Drlg. Co., Wichita Falls, M. H. Salmon, 23, 2, W. P. Zuber sur, 150 ft from n and 225 ft from e line. Pure Oil Co., Fort Worth, J. W. Maddox, A, 33, 8, H. S. Arnold sur, 871 ft from n and 150 ft from e line.

NAVARRO COUNTY—Pure Oil Co., Fort Worth, G. W. Martin, 2, E. Friar sur. M. W. David, 1, same sur; 2, same sur; 3, same sur.

NUECES COUNTY—Moody-Seagraves Co., and Agua Dulce O. & G. Co., Agua Dulce, O. W. Sanders, 400, 2, S 35, Benton sur, 450 ft from s and e lines of sur.

PECOS COUNTY—F. P. Zoch, San Antonio, Cordova-Union, 160, 1, S 81, B 11, H&GN sur, center of sw¼. Grayburg Oil Co., San Antonio, Pecos River, 1. McGee & Doran, Amarillo, Pecos Valley Oil, 40, 1, S 34, B 3, H&TC sur, 150 ft from se and sw line sw¼ of sw¼. Red Bank Oil Co., Tulsa, Okla., J. L. Nevill, 320, 1, S 40, B 12, H&GN sur, 330 ft from s and w lines of s½ of sec. Rowan & Tong, San Antonio, J. A. McDonald, 640, 2, S 46, B 12, H&GN sur, 153 ft from n and 170 ft from w line s½ of ne¼; 3, 330 ft from s and w lines of ne¼. Condor Pet. Co., Abilene, Wargerin, 80, 1, S 52, B 11, H&GN sur, 330 ft from n and e lines of n½ of ne¼. Cranfill & Reynolds, Cisco, J. S. Masterson, 80, 1, S 104, B 10, H&GN sur, 330 ft from s and w lines of sec. Oil Operators Trust, Fort Worth, K. C. Land Co., 320, 1, S 31, B 178, T.C. Ry sur, 330 ft from n and w lines of ne¼. Shell Pet. Corp., Dallas, Bower, C, 80, 2, S 31, B 16, Univ. sur, 2331 ft from n and 1020 ft from w line of sec; 3, 1661 ft from n and 330 ft from w line of sec; 4, 2331 ft from n and 330 ft from w line of sec. Taylor-Link Oil Co., San Angelo, University, 80, 7, S 31, B 16, Univ. sur, 330 ft from n and 2310 ft from w line sec.

PANOLA COUNTY — Texas Co., Wichita Falls, G. W. Brumble, 16, 7, E. F. Mitcheson sur, 300 ft from w and 350 ft from s line. G. Brumble, 98, 8, J. Womack sur, 1085 ft from w and 330 ft from s line sur.

PALO PINTO COUNTY—Prairie Oil & Gas Co., Ranger, D. G. Vick, 1, S 2, C.T. Ry. sur, 1320 ft from s and e lines. O. K. Carter, 1, McKinley-Williams sur, 560 ft from e and 214 ft from s line.

SCURRY COUNTY—D. H. Byrd et al, Dallas, J. E. Murphy, 40, 1, S 114, B 97, H&TC sur, 330 ft from n and e lines of sec.

SHACKELFORD COUNTY—P. S. Kendrick et al, Albany, W. H. Stephens, 160, 8, S 6, Bayland Asy. sur, 500 ft from n and 1000 ft from w line. Big State Oil Corp., Dallas, Russ-Webb, 427, 13, S 17, V 11, T&P sur, 2700 ft from w and 1800 ft from s line. P. K. French, Fort Worth, E. S. Dawson, 320, 2, S 161, E.T. Ry. sur, center of se¼ of sw¼. Grisham-Hunter Corp., Abilene, W. Y. Davis, 300, 4, S 20, B 13, T&P sur, 440 ft from s No. 3 nw¼.

STEPHENS COUNTY—R. E. Grace et al, Albany, Allison, 320, 1, 2243, TE&L sur, 150 ft from s and e lines of sur. Nunn & Herman, Eastland, N. K. Ford, 80, 1, S 39, B 6, T&P sur, 150 ft from n and e lines of se¼ of se¼.

UPTON COUNTY—T. P. Coal & Oil Co., Ranger, J. H. Shirk, 160, 1, S 1, B 3, MK&T sur, 405 ft from e and 425 ft from s line.

VAL VERDE COUNTY—Phantom Oil Co., Tulsa, Okla., I. G. Ingram, 160, 1, S 44, B D8, EL&R sur, 175 ft from e and 300 ft from s line sec.

WICHITA COUNTY — Grayce Oil Co., Wichita Falls, Rathke, 8, J. E. Roller sur, 150 ft from n and e lines. Riner & Omohundro, Wichita Falls, Chilson, E, 20, 1, M. Ramsey sur, 150 ft from n and e lines. Bateman & Dingee, Vernon, C. W. Moeller, 20, A1, S 290, Wag. Col. sur, 150 ft from n and w lines of sec.

WILBARGER COUNTY — Empire Gas & Fuel Co., Wichita Falls, W. T. Waggoner, 160, 12A, S 32, B 4, H&TC sur, 525 ft from e and 57 ft from s line nw¼. Fain-McGaha Oil Corp., Wichita Falls, W. T. Waggoner, GG, 80, 1, S 8, B 4, H&TC sur, 450 ft from n and 150 ft from w line sw¼ ne¼. E. H. Pigg, Vernon, T. J. Milner, 60, 1, S 30, B 9, H&TC sur, 150 ft from n and 200 ft from e line.

WASHINGTON COUNTY — Penn-Tex Oil Co., et al, San Antonio, M. Kames, 112, 1, S. M. Williams sur, 285 ft from e and 253 ft from s line. Biltmore Oil Co., Fort Worth, B. Moore, 160, 1, W. S. Brown sur, nw corner.

WALLER COUNTY—Kirby Pet. Co., Houston, G. F. Rogers, 500, 1, J. McFarland sur, 2600 ft from n and 600 ft from e line.

YOUNG COUNTY — Moran & Smith, Wichita Falls, M. A. Hoffman, 12, 1A, Averett sur, 150 ft from e and 1354 ft from s line. Trinity Oil Co., Wichita Falls, B. Barrett, 30, 2A, E. W. Sargent sur, 150 ft from n and 450 ft from e line. R. E. Allday, Wichita Falls, J. Cross, 40, 1, 1993, TE&L sur, 750 ft from n and 150 ft from e line. Sun Oil Co., Dallas, O. Deitrich, 114, 12, S 4, BBB&C sur, 150 ft from n and e lines. E. P. Bowen, Wichita Falls, H. E. Neely, 20, 1, 176, TE&L sur, 450 ft from n and e lines of ne¼ of ne¼. Bridwell & Mayfield, Wichita Falls, F. M. Cullers, 120, 2, O. L. Hyatt sur, 150 ft from n and w lines. Riggs & Williams, Graham, J. F. Shatto, 66, 1, 1916, TE&L sur, 150 ft from n and e lines. Imp. Oil Co., and Riggs & Oliphant, Graham, D. W. Dickenson, 46, 1, 1949, TE&L sur, 150 ft from n and w lines. Comac Drlg. Co., Wichita Falls, J. Hauser, 80, 1, J. Pointevent sur, 1470 ft from e and 150 ft from s line. Wise & Porterfield, Olney, F. M. Cullers, 40, 1, G. Stinnett sur, 150 ft from e and 450 ft from s line of ne¼. C. A. Stewart, Wichita Falls, J. W. Daws, 160, 1683 TE&L sur, 150 ft from w and 873 ft from s line. Baker & Pardue, Breckenridge, W. L. Donnell, 76, 1, G. Ballah sur, 150 ft from n and 200 ft from w line. Republic Prod. Co., Dallas, H. F. Haygood, 108, 3, 1468, TE&L sur, 850 ft from e and 450 ft from s line. A. H. Parks et al, Abilene, F. M. Cullers, 40, 1, S 2, G. N. Stinnett sur, 150 ft from n and e lines.

ZAPATA COUNTY—O. W. Killam, Laredo, G. G. Flores, 640, 2, S 250, T.C. Ry. sur, 150 ft from n and 1665 ft from e line. Killam & Duggan, Laredo, E. Cuellar, 640, 8, S 277, T.C. Ry. sur, 300 ft s of No. 6.

CALIFORNIA

FRESNO COUNTY—Rio Grande Oil Co., Mosesian 1, 14-13-17. Western Gulf Oil Co., No. 5, 9-18-18.

KERN COUNTY—Wesco Pet. Co., No. 1, 14-11-24. Fred M. Sayre, No. 1, 8-26-28.

KERN RIVER—General Pet. Corp., Wetmore 8, 14-28-27. C. C. M. Oil Co., No. 28, 23-28-27.

KETTLEMAN HILLS — George F. Getty, Inc., Erwin 1, 20-23-19.

KINGS COUNTY—J. E. O'Donnell, Dudley Ridge 2, 7-23-20.

LONG BEACH—Aitken Oil Co., No. 3, 24-4-13. Otis Hoyt, No. 9, 24-4-13. Pan-American Pet. Co., Chainey 5, 19-4-12. W. F. Meyer, No. 5, 24-4-13. Otis Hoyt No. 8, 29-4-12. The Texas Co., Fee 1, 13-4-13. Bixby, Adams and McFadden, B. A. M. 2, 29-4-12.

MIDWAY—Richfield Oil Co., Calivada 4, 34-32-24.

MT. POSO—Union Oil Co., Tribe 7, 28-27-28.

RICHFIELD—Continental Oil Co., R-S 1, 33-3-9.

SANTA FE SPRINGS—Associated Oil Co., Clarke 22, 1-3-12. Standard Oil Co., S-G 11-A, 31-2-11; S. G. 13, 31-2-11; S. G. and J. Line 2, 6-3-11. Second Twin Bell Synd., No. 7, 6-3-11. Lockhart and York No. 3, 6-3-11.

SUMMERLAND — Sandoma Gasoline Co., State Lease 18-1, 22-4-26. George F. Getty, No. 16-1, 21-4-26; Becker Fee 2, 21-4-26; Becker Fee 3, 21-4-26.

SUNSET—Reservoir Hill Gasoline Co., Havenstrite 2, 17-11-23. Signal Oil and Gas Co., Signal Wallace 4, 8-11-23.

VENTURA—Shell Oil Co., Edison 26, 28-3-23.

WILDCATS FROM ALL SECTIONS

LOUISIANA

Company, Well and Location — Initial Production Bbls. — Depth

CADDO PARISH—

Ray-Dawes Drilling Co., Hunter (former Hunter 3), 9-19-14 .... 144 2440

RICHLAND PARISH—

Hope Prod. Co., Boykin 1, 21-17-6e .....¶2½ 2450

Palmer Corp., Boykin 1, 21-17-6s.. ¶3 2450

BOSSIER PARISH—Nemours Corp.'s Kilgore 1, 31-23-11, rig up to deepen, td 3062 ft. Corbett et al's Murff 1, 16-17-11, sd 990 ft. Nell & Lanier's Biedenharn 1, 23-21-14, washing to bottom, td 790 ft. Walker et al's Antrim 1, 28-22-13, tested show oil 3078 ft, arr deepen. John F. Woodman's Bolinger 1, 9-22-11, sd wo 3532 ft. Frank Estes' Pardee 2, 3-22-11, rig up. Morgan et al's Weatherbee 1, 21-19-11, sd drilling water well, td 1300 ft. Nesbit et al's Burt 1, 20-19-13, lcn.

CADDO PARISH—Sam Gold et al's Hunter 3, 17-19-14, dr 80 ft; Hunter 4, 17-19-14, lcn. S. T. Onyett, Tr.'s, Dixon 1, 10-19-14, set 6⅝-inch cas 2382 ft, arr drill plug. I. N. Pharris, Tr.'s, Oden 1, 19-19-14, dr 2130 ft. Ohio Oil Co.'s Hunter 4, 17-19-14, dk; Hunter 6, 17-19-14, dr 850 ft. Standard Oil Co. of La.'s Henderson 3, 7-19-14, dk; Hunter 3, 17-19-14, set 6-inch cas 2360 ft; Hunter 8, 17-19-14, dk; Hunter 9, 8-19-14, dr 100 ft; School Board 2, 16-19-14, bailed dry 2441 ft, show of oil, dr gummy shale 2483 ft; School Board 3, 16-19-14, bailed dry 2440 ft, deepened to 2453 ft, arr bail. Lide et al's Levee Board 1, 24-19-15, dr lime and shale 2205 ft; Hunter 1, 22-19-14, 5½ foot sand, trying standardize, cups cut, unable get 24 hr gauge, est good 35 bbls daily 1 per cent sw, td 2457 ft (corrected). Gulf Ref. Co.'s Hunter 4, dr 2200 ft; Hunter 5, 17-19-14, dr 1900 ft; Oden 5, 18-19-14, arr abn, td 2425 ft. Haynes Bros. Oden 1, 20-19-14, dr shale and boulders 2200 ft. Texas Co.'s Hunter 2, 9-19-14, topped cap rock 2419 ft, dr into oil sand 2421 to 2423 ft, sand shale to 2440 ft, setting liner to test; Hunter 3, 8-19-14, arr core oil sand 2412 ft; Hunter 4, 8-19-14, rig up; Hunter 5, 9-19-14, dk. Old River Oil Corp.'s Sibley 1, 15-19-14, coring 2375 ft. Ray-Dawes Drilling Co.'s Hunter A-2, (formerly Hunter 3), flowing 144 bbls oil through 2½-inch tub, td 2440 ft; Hunter A-3 (former Hunter 4), 9-19-14, dk; Hunter A-4, 9-19-14, bldg dk. J. E. Woodley's Pittman 1, 23-19-14, dr 200 ft. Palmer Corp.'s Hunter 1, 8-19-14, dr 2428 ft (deepening). R. W. Norton's Hill 1, 23-21-16, dr red shale 3405 ft.

CLAIBORNE PARISH — Leue Oil Co.'s Taylor 1, 16-22-6w, dk. El Dorado Chief Oil Co.'s Dance 1, 27-20-7w, sd for fuel 1500 ft. Triangle Drilling Co.'s Kilpatrick 1, 7-19-5w, dr 176 ft.

DE SOTO PARISH—Benson O&G Co.'s Hill 1 (formerly reported Wise 1) 3-10-13, rig up. P. J. Becker's Tull 1, 23-21-13, fsh ds 2475 ft. Fair et al's Hamilton 1, 1-12-13, sd wo 2855 ft. L. M. Moffitt, Tr.'s, Boatright 1, 3-10-13, sd wo 3129 ft. Longstreet Synd.'s Ramsey 1, 33-13-16, TA 2802 ft. R. O. Roy's Rogers 1, 13-13-14, dr 2845 ft.

FRANKLIN PARISH—Davis et al's Moore 1, 12-11-6e, sd 1430 ft.

LA SALLE PARISH — Tunica Pet. Co.'s L&A 50, 16-7-2e, 10 ft sand wosr, td 814 ft.

MOREHOUSE PARISH—Rainbow Oil Co.'s Louisville Cooperage 1, 33-22-8e, dk. J. P. White's Chess Wymond 1, 32-19-6e, tested sw, sd wo 3025 ft.

NATCHITOCHES PARISH — S. D. McDaniels' Clark-Morse 2, 23-5-6w, sd 2536 ft. Robeline O&G Co.'s Cassady 1, 7-8-9w, ds stuck 3230 ft. Nichols & Wilder's Clark 1, 10-10-8w, rig up wo.

OUACHITA PARISH—Forrest & Russell's School Fee 1, 16-16-4e, sd wo 4350 ft.

RAPIDES PARISH — Ayers Bros.' Wicklipp 1, 9-5n-2w, dr 300 ft.

RED RIVER PARISH — W. D. Ball's Krumbholz 1, 32-14-10, dr 450 ft. Benedum & Trees' Franklin 1, 29-11-9, tested 1 mil ft gas 2987-3017 ft coring 3073 ft. D. H. Reddick's Johnson 1, 17-12-10, rig up. Le Grande et al's Sample 1, 11-14-11, rig up. Eyler's Oil Co.'s Chaffraix 2, 30-12-10, dr chalk rock 1532 ft. Triple Oil Co.'s Pollock 1, 33-13-11, dr 769 ft.

RICHLAND PARISH — Austin & McDonald's Millsaps 2, 17-17-6e, sd wo 2697 ft; Millsaps 3, 16-17-6e, sd wo 2477 ft; Millsaps 4, 16-17-6e, lcn; Millsaps 5, 8-17-6e, dk. S. R. Humble's Binion-Sartor 1, 22-17-6e, tested 3 mil ft gas, heading well, td 2481 ft. Palmer Corp.'s Eubanks 1, 26-17-6e, dr 1680 ft. La. Pet. Co. 1, 22-17-6e, cemtd 4¼-inch cas 2375 ft, td 2470 ft; Miles 2, 12-17-6e, set 6-inch cas 2315 ft. Southern Carbon Co.'s Binion-Sartor 1, 21-17-6e, set 6-inch cas 2273 ft. Northern La. Nat. Gas Co.'s Boykin 4, (relief well 3), 20-17-6e, set 6-inch cas 2299 ft. Hope Prod. Co.'s Boykin 1, 21-17-6e, 2,520,000 ft gas R.P. 1020 pounds, td 2450 ft. Palmer Corp.'s Boykin 1, 21-17-6e, 2,700,000 ft gas rock pressure 1100 pounds, td 2450 ft.

SABINE PARISH—R. L. Gay, Tr.'s, Bowman-Hicks 4, 14-7-14, wosr td 2350 ft. Long-Bell Lbr. Co. 1, 26-8-14, arr set 6-inch cas at 3369 ft, td 3414 ft. Sabine Lbr. Co. 2, 23-7-14, dr lime 3415 ft; Bowman-Hicks A-1, 34-8-12, dr 661 ft. A. H. Tarver's Long-Bell Lbr. Co. 1, 29-8-13, fsh bailer, td 3535 ft; Long-Bell Lbr. Co. 2, 18-8-13, TA 2100 ft. R. L. Gay, Tr.'s, Bowman-Hicks 5, 14-7-14, rig up.

UNION PARISH—Fred Stovall's Stovall 1, 32-23-4e, lcn.

WEBSTER PARISH—F. M. Fuller's Monzingo 1, 27-18-8e, dk. P. Hudson's Slack 1, 1-22-11, wosr td 2747 ft; Gardner 1, 1-28-11, dr 1050 ft. Magnolia Pet. Co.'s Scroggins 2, 1-22-11, dr 1982 ft. Sarepta Oil Co.'s Gardner 1, 1-22-11, dr 1510 ft. Paul C. Warren et al's Martin 1, 20-20-9, dk. Magnolia Pet. Co.'s McCook & Hibbler 1, 22-21-10, tested 284 joints drill mud, no oil or gas 1 ft sand, td 6888 ft; Kight 1, 33-23-9, bailing cas, td 2676 ft. J. W. Clark, Tr.'s, Wise 1, 30-23-9, dr 1820 ft. Magnolia Pet. Co.'s Bailey 1, 29-23-9, old well being deepened, dr, td 2774 ft.

WEST CARROLL PARISH—W. F. Hyde et al's Chickasaw Imp. Co. 1, 24-23-11e, dr 2800 ft. La. Gas & Fuel Co.'s Marston 1, 12-19-10e, dr shale 1450 ft.

MISSISSIPPI

Company, Well and Loctaion — Initial Production Bbls. — Depth

HINDS COUNTY (Jackson Dist.)—

Oscar Brown, Riverside 1, 23-16-5 * 1150

ALCORN COUNTY — Alcorn Pet. Co.'s Matthews 1, 14-2-7, fsh in sandy shaley limestone, td 2700 ft.

CHICKASAW COUNTY — Hightower & Golson's Fleming 1, 20-13-13, sd 1240 ft.

CLAIBORNE COUNTY—Ben White's Old Hen 1, 26-10-4, sd 2004 ft.

HARRISON COUNTY (Gulfport Dist.)—Dalton Oil Co.'s Lopez 1, 15-7-10w, lcn.

HINDS COUNTY (Jackson Dist.)—Mrs. Ella Rawls Reeder's State Land 1, 25-6-1, arr resume dr and arr set 6-inch cas, td 2895 ft. Oscar Brown's Riverside 1, 23-16-5, fresh water, abn, td 1150 ft (formerly Hennesey et al.) Southern Christian Institute's Fee 1, 29-6-4, sd waiting for 5 3/16-inch cas, td 1163 ft.

HUMPHRIES COUNTY—Steel et al's Love 1, 30-14-3, dry abn, td 60 ft, no cas set.

LA FAYETTE COUNTY—F. E. West et al's May 1, 22-10-1w, rig up.

LAUDERDALE COUNTY (Meridian Dist.)—Merid'an Nat. Gas Co.'s Mattie Houser 1, 33-8-18, sd in white gumbo, td 2410 ft. Lauderdale O&G Co.'s Lackey 1, 2-7-16, sd in sand 2786 ft. J. E. Smith Oil Co.'s Craig 1, 2-6-14, dk.

LINCOLN COUNTY (Brookhaven Dist.)—Lincoln O&G Co.'s Pat Case 1, 21-8-6, dr gmbo 1085 ft.

LEE COUNTY — Lee County Pet. Co.'s Hickman 1, 12-8 6, sd 920 ft.

MONROE COUNTY (Amory Dist.)—Amory Pet. Co.'s Hall 1, 8-13-17, fsh for pipe, td 3035 ft. Amory Dev. Co.'s Bourland 1, 2-13-19, arr resume dr, td 2580 ft. Park Bowser's Cowart 1, 2-12-19, sd wo 30 ft.

RANKIN COUNTY (Jackson Dist.)—Home Oil Prod. Co.'s Rainey 1, 13-5-1e, set 12½-inch cas 225 ft, coring shaley lignitic sand 1308 ft.

WARREN COUNTY (Vicksburg Dist.)—Henderson et al's Dornbusch 1, 8-18-15, arr resume dr 2350 ft.

WEBSTER COUNTY — Cumberland Oil Co.'s Henley 1, 15-21-11, TA 1865 ft.

YALABOUSHA COUNTY (Water Valley Dist.)—Philp Bros.' James 1, 20-11-5w, dr sandstone 3224 ft. J. D. Collette et al's Blackmer 1, 14-11-4w, lcn.

ALABAMA

CHOCTAW COUNTY—Robinson & Greer's Douglas Oil Co. 1, 15-9-2, coring green sandy shale 3245 ft. Gulf Ref. Co.'s Dease 1, 33-9-2, dr 800 ft. McCall 1, 30-9-2, dr depth not given. Lassiter 1, 26-9-3, dr 600 ft; Stallworth 1, 7-9-2, dr 535 ft.

HOUSTON COUNTY—J. R. Sealey's Fee 1, 13-1n-27s, changing to rotary from cable tools, td 3100 ft.

LAMAR COUNTY — Briggs & Knapp's Wefel 1, 25-12-14, set 6-inch cas 1040 ft, sd waiting on sand line, td 1200 ft.

LAWRENCE COUNTY — Peerson Drilling Co.'s Jacobs 1, 11-7-7, TA 300 ft.

MARION COUNTY — P. J. McAlpine's Clark 1, 29-11-14, lcn.

SUMTER COUNTY—G. W. Bates' Fee 1, 3-18-1w, sp.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, sd 650 ft; Hobson Bros. 1, 9-8-2, 6-inch cas stuck in sand and shale 1450 ft. Oscar Brown's U. S. Land & Cotton 1, 26-3-2, no report.

TENNESSEE

DECATUR COUNTY — Chester County O. & G. Co.'s Montgomery 1, set 6-inch cas 1045 ft, sd driller injured, td 1130 ft. Standard Oil Co. of La.'s Wyatt 1, straightening crooked hole, td 1276 ft.

OKLAHOMA

WOODS COUNTY—T 28n, R 16w, Sec. 14, Peerless et al, Cromwell 1, c sw se, sd 1500 ft.

GRANT COUNTY—T 28n, R 4w, Sec. 12, Boucher et al, Dedmon 1, sw se, ur 8-inch at 3135 ft.

KAY COUNTY—T 28n, R 1w, Sec. 24, DeCamp & Lancer, Covey 1, sec ne, Wilcox 3456-78 ft, hfw sd.

WOODS COUNTY—T 27n, R 16w, Sec. 33, Sinclair, Share 1, c ne sw, fsh 5315 ft.

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 1, ne se nw nw sd 1420 ft.

GRANT COUNTY—T 27n, R 5w, Sec. 20, J. V. Bailey, Brewer 1, c sw se, rig sd.

HARPER COUNTY—T 26n, R 24w, Sec. 14, Sinclair, Howell 1, c sw sw, dr 5143 ft.

KAY COUNTY—T 26n, R 2e, Sec. 32, J. A. Vincent et al, McNeal 1, nwc ne, sd 2795 ft.

WOODS COUNTY—T 25n, R 15w, Sec. 10, Bu Vi Bar et al, 1, sec sw, dr 5888 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Vollmer 2, nec se ne sw, lost tools 5640 ft, sd.

WOODWARD COUNTY—T 24n, R 17w,

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports; *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn—abandoned; bbls—barrels; b.s.—basic sediment; cas casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in-inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

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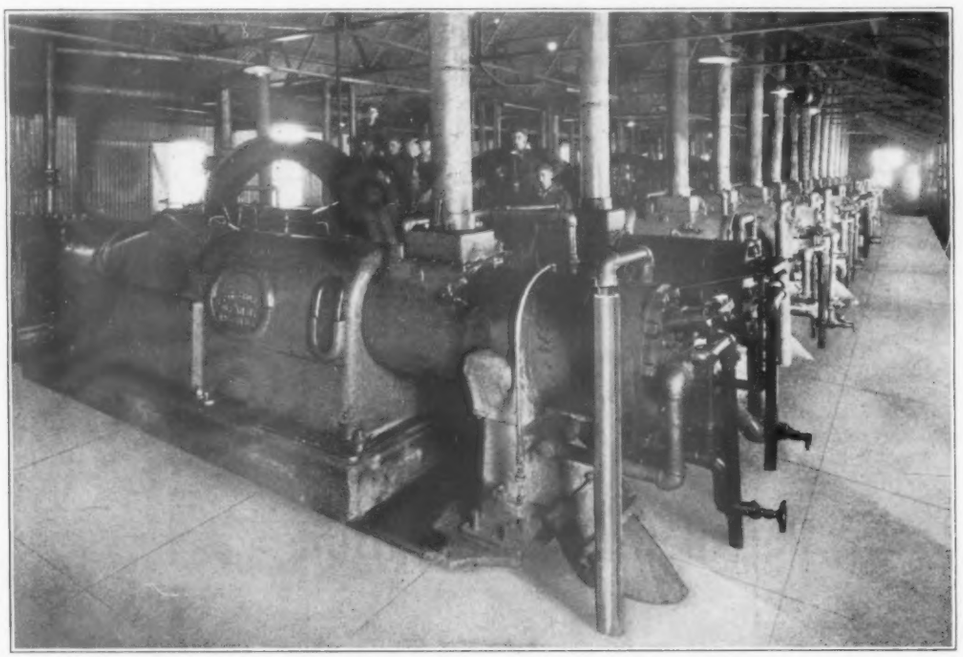

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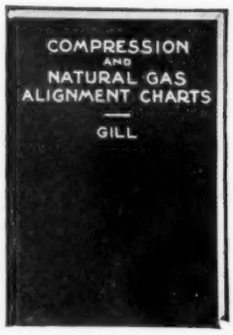

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Sec. 32, Otstot, Simmons 1, sec, sd 1500 ft.

WOODS COUNTY—T 24n, R 13w, Sec. 18, Miller et al, Copenhaver 1, nwc spudded and sd.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, Washoma, Acre 1, swc ne, dr 1700 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, sec nw, hfw 4730-4800 ft, td 5556 ft, ur 5-inch.

WOODWARD COUNTY—T 23n, R 20w, Sec. 9, Harris & Haun, Wyatt 1, c se, hfw 3807-25 ft, hfw 4390-4400 ft, ur 6-inch. T 23n, R 17w, Sec. 2, John Farrand, Belva 2, csl sw se, sd 1387 ft.

NOBLE COUNTY—T 22n, R 1e, Sec. 22, Peerless et al, Wentz 1, nwc sw, ur 15-inch 830 ft. T 22n, R 1e, Sec. 24, sw ne ne, Wilcox 4698-4728 ft., hfw ur 6-inch 4930 ft.

WOODWARD COUNTY—T 21n, R 21w, Sec. 25, Sharon, Elmore 1, swc rig blown down 3025 ft. T 21n, R 19w, Sec. 15, Burgoyne Bros., Merklin 1, sw se ne, sd 1910 ft.

MAJOR COUNTY—T 20n, R 14w, Sec. 23, Keller et al, Horton 1, c ne ne, spudded and sd.

NOBLE COUNTY—T 20n, R 1w, Sec. 26, Magnolia, King, 1, SEc, SW, HFW 3730-3780 ft 6-inch @ 4815 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Wasshoma Pet., Phillips 1, C NW SW, 2945 ft sd.

LOGAN COUNTY—T 18n R 3w, Sec. 33, Haley & Consolidated, Quier 1, SEc SW, sd 3970 ft.

KINGFISHER COUNTY—T 16n, R 7w, Sec. 6, Gault Brown, Bech 1, C NW SE, (OWDD), show gas 4088-6128 ft, sd 6015 td.

CANADIAN COUNTY—T 14n, R 6w, Sec. 9, A. D. Spears, Piatt 1, SWc NW, sd 3223 ft.

OKLAHOMA COUNTY—T 13n, R 1w, Sec. 13, T. B. Slick, Martin 1, C NW NW, stand. 5512 ft.

TEXAS COUNTY—T 1n, R 15 E. C. M., Sec. 25, Skaer et al, Hitch 1, NWc, sd 250 ft.

OSAGE COUNTY—T 26n, R 7e, Sec. 19, Peters, 1, SEc, dr 2730 ft. Sec. 23, White Eagle, 1, NWc NE SE, Miss. lime 2703 ft sd. T 24n, R 6e, Sec. 13, A. G. Oliphant et al, 1, NEc, SW, dr 1515 ft.

PAYNE COUNTY—T 18n, R 6e, Sec. 4, Consolidated, Freeman 1, SWc, dr 2505 ft.

LINCOLN COUNTY—T 17n, R 4e, Sec. 27, Blackwell O&G Co., McKeown 1, NE SW SW, Wx 4422-62 ft. Water P. B. to 3792-3838 test. T 17n R 5e, Sec. 7, Mote & Wheeler McLaughlin, 1, SE NW NW, dr 1990 ft. T 17n, R 6e, Sec 28, F. R. Billingslea, Davis 1, SE NE NE, dr 2485 ft. T 16n, R 5e, Sec. 1, Flynn & Morgan, Johnson 1, SWc NE, dr 730 ft. T 12n, R 3e, Sec. 29, Phillips Pet., Roberson 1, SEc NW, dr 2964 ft.

OKFUSKEE COUNTY—T 12n, R 9e, Sec. 36, Henry Oil Co., Harjo 1, NWc, dr 1175 ft. T 12n, R 10e, Sec. 3, Shepard et al, Shepard 1, SE NW SW, fish 2500 ft. T 11n, R 10e, Sec. 9, C. O. Buckles et al, Tarvin 1, NWc SE, lcn.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, SWc NW SE, show oil 5446-70 ft., 1-M gas 5464-80 ft shot 240 qts. 5556-60 ft fish tools.

HASKELL COUNTY—T 9n, R 18e, Sec. 10, Marion, Sanders 1, NW NE SW, 2 M gas at 1800 ftfi sd 2692 ft.

LATIMER COUNTY—T 5n, R 18e, Sec. 15, Limestone O&G Co., Murray 1, SWc, 1¼ M gas 2518-30 ft show gas 3380-3400 ft set 5-inch 3950 ft, dr 4010 ft.

OKLAHOMA COUNTY—T 12n, R 1w, Sec. 19, Mid-Kansas & Ramsey, Trosper 1, NEc NW, td 69-4 ft Wilcox 6840 to 6904 ft P. B. to 6157-66 ft. Initial prod. 650 bbls. now 290 bbls. completed. T 12n, R 2w, Sec. 30, Magnolia, Noble 1, NWc SW SW, cemented off 6345 ft.

OKFUSKEE COUNTY—T 11n, R 7e, Sec. 6, Superior, Carolina 1, SEc, cemtg. 8-inch 4805 ft.

SEMINOLE COUNTY—T 10n, R 5e, Sec. 8, McCulloch et al, Luckett 1, NEc NW, Wilcox 4903-10 water. T 10n, R 6e, Sec. 12, I. T. I. O. Chatkey 1, SWc NE, dr 4731 ft.

HUGHES COUNTY—T 9n, R 12e, Sec. 29, Canady et al, Kanard 1, SWc NW NW, dr 1200 ft.

POTTAWATOMIE COUNTY—T 8n, R 3e, Sec. 9, Cal Cul Oil Co., Wilson 1, NW NE NW, dr 8-inch 4815 ft. T 8n, R 4e, Sec. 3,

Superior, Bayliss 1, SWc NW, dr 1875 ft. Sec. 9, Keister & Manning, Tibbes 1, NEc SW, dr 3676 ft.

CLEVELAND COUNTY—T 7n, R 1w, Sec. 51, Sooner, Vandeveer 1, NE NW SW, sd 3120 ft.

POTTAWATOMIE COUNTY—T 7n, R 3e, Sec. 15, Amerada & I. T. I. O., Vineyard 1, N WNE NE, Hunton lime 4340-4654 ft., flowing 260 bbls., dr 4718 ft. Sec. 19, Frank Moore, Fundis 1, SEc NE, lcn. T 6n, R 3e, Sec. 11, Shafler ½ Margay, Adams 1, NEc, fish 5-inch at 4632 ft.

McCLAIN COUNTY—T 6n, R 3e, Sec. 36, Sikes et al, Cook 1, SW NW NE, rig.

SEMINOLE COUNTY—T 6n, R 6e, Sec. 8, E. L. Harris, Harjoche 1, SE NE SE, dr 3200 ft.

POTTAWATOMIE COUNTY—T 5n, R 5e, Sec. 4, I. T. I. O., Philpot 1, NWc, dr 1923 ft.

HUGHES COUNTY—T 5n, R 9e, Sec. 17, E. W. Whitney, Huddleston 1, SEc SW, 3935 ft sd. T 5n, R 11e, Sec. 15, J. J. Wright, Roberts 1, R. U. S. T.

PITTSBURG COUNTY—T 4n, R 12e, Sec. 32, Kerr & Key, Tall 1, C NW NW, re cemtg. 8-inch 2580 ft.

COAL COUNTY—T 2n, R 8e, Sec. 6, J. S. Cosden, Richardson 1, NW NE NE, Wilcox 2950-3095 ft. HFW sd. Sec 7, McGinley & Singler, Wiltsey 1, NW SE SE, sd 3016 ft. Sec. 10, E. W. Whitney, Miller 1, SEc NE, sd 202 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Bucy & Stone, Williams 1, C SW, rig. T 11n, R 26w, Sec. 4, L. C. Hivick, Davis 1, C NW NE, sd 1850 ft.

CANADIAN COUNTY—T 8n, R 22w, Sec. 20, Carson et al, Denby 1, SW SE NE, dr 1575 ft.

GREER COUNTY—T 6n, R 24w, Sec. 17, I. T. I. O. et al Fee 1, C NE, td 1902 ft fish @ 1500 ft.

CADDO COUNTY—T 6n, R 13w, Sec. 8, Abernathy & Brown, Horton 1, SEc, dr 60 ft. T 6n, R 10w, Sec. 26, English Drlg., Gardner 1, NWc SW, dr 1500 ft. T 5n, R 17w, Sec. 2, N. P. McWhirter, Sherwood 1, SWc NE, dr 1250 ft.

HARMON COUNTY—T 4n, R 26w, Sec. 8, S. M. Staufler, Castleman 1, NWc SE, sd 625 ft.

COMANCHE COUNTY—T 1s, R 11w, Sec. 17, Bridwell et al, Porter 1, NEc SE SE NW, sd 2500 ft.

STEPHENS COUNTY—T 2s, R 4w, Sec. 21, Magnolia, Martin 1, SWc, dr 3630 ft.

McCLAIN COUNTY—T 5n, R 3e, Sec. 16, Homaokla, Newton 1, SE NE NE HFW 2956-66 ft UR 6-inch 2967 ft.

JOHNSON COUNTY—T 1s, R 7e, Sec. 29, Smith & Kinsley, Lane 1, SEc NW, sd 2250 ft.

CARTER COUNTY—T 3s, R 4w, Sec. 23, Porter & Monahan, Robinson 1, SEc NW, dr 2620 ft. T 4s, R 2e, Sec. 32, Tex-Okla. Drlg. Co., Anderson 1, SE NE SE, sd 420 ft.

MARSHALL COUNTY—T 5s, R 5e, Sec. 17, Jordan et al, Pen Mutual 1, NW NE SE, sd 700 ft.

BRYAN COUNTY—T 9s, R 9e, Sec. 36, W. C. Endicott et al, Craige 1, C NW NE, dr 1830 ft.

WOODWARD COUNTY—T 23n, R 17w, Sec. 23, Prairie, Wilbur 1, NEc, dr 5400 ft.

CLEVELAND COUNTY—T 10n, 2w, Sec. 8, Prairie, Phillips Slick, Sudik 1, C NE NE, waiting on cement to set @ 7121 ft.

KANSAS

STEPHENS COUNTY—Trees Oil Co's Candy 1, sw ne sw 3-35-38w, mvg in rotary.

SUMNER COUNTY — Davidson et al's Strickland 1, sw se, 12-35-1w, rig.

STEVENS COUNTY—White & Chenney's Unknown 1, nec 11-34-42w, rog. W. Sidwell et al's Kelly 1, sw ne 16-34-38w, sd 1310 ft.

BARBER COUNTY—Skelly's Temple Ranch 1, sw ne 13-34-15w, R. U. S. T. 4045 ft.

HARPER COUNTY—Slick's Miller 1, Sec 13-34-8w, dr 5025 ft.

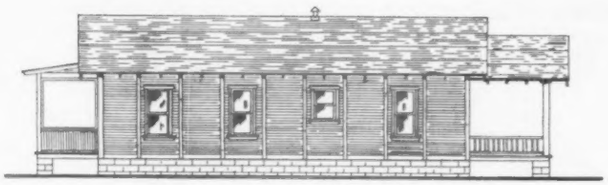
SUMNER COUNTY—Mid-Continent's Clark 1, Sec 31-34-3w, dr 4480 ft. Morgan & Carey Hawkins 1, sw se 9-34-1e, sd 2200 ft.

STEVENS COUNTY—McKenna et al's Unknown 1, c nw nw 29-33-36w, spd and sd.

SUMNER COUNTY—Shell's Armstrong 1, nec 12-33-1e, dr 2434 ft.

BARBER COUNTY — Robertson et al's Powell 1, c se se, 11-32-10w, dr 3260 ft.

HARPER COUNTY—Slick's Thompson 1,



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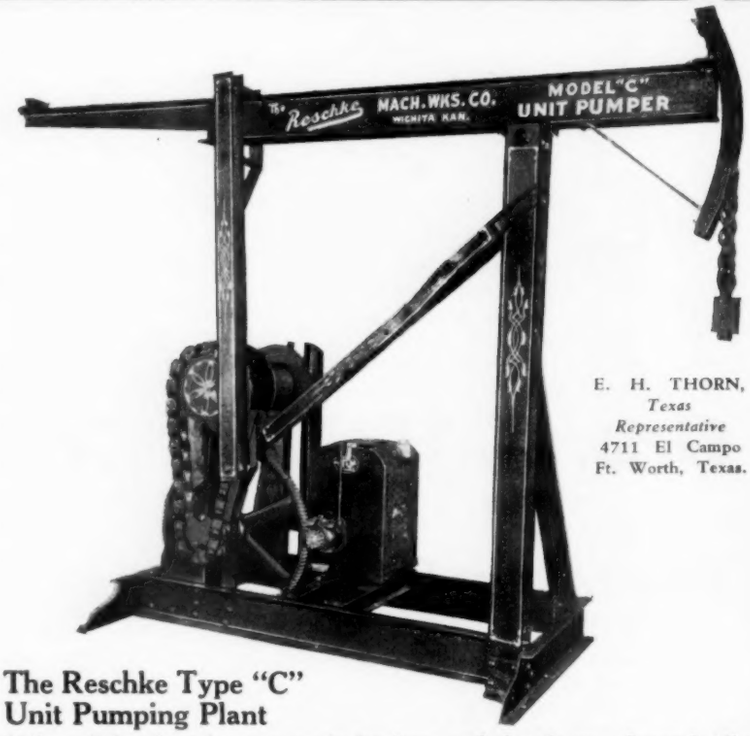

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nwc 10-32-5w, show oil Viola lime 4936-50 [illegible]

COWLEY COUNTY—Shawver et al's Oldham 1, nw se 23-32-3e, sd 1500 ft.

HARPER COUNTY—Beeler et al's Bear 1, c ne 21-31-6w, rig.

SUMNER COUNTY—Kingwood's Stayton 1, c ne 18-31-2w, spd.

COWLEY COUNTY—J. B. Markey's Tatum 1, se sw 11-31-6e, sd 500 ft.

SUMNER COUNTY—Slick, Pryor & Lockhart's Pease 1, nws 33-31-1w, spd. Lario et al's Osborne 1, NW SW 20-30-1w, dr 1190 ft.

COWLEY COUNTY—Landon's Wheeler 1, c sw nw se 24-30-4e, RU.

BARBER COUNTY—Allison & Fitzwilliam's Morrise 1, c nw se se 9-30-12w, dr 4400 ft, top Miss. 4376 ft.

SEDGWICK COUNTY—Johnson & Marshall's Roy 1, c ne se sw 23-29-1w, HFW siliceous lime 3804-56 ft. D. & A. Lario Teachoiff 1, ne sw 27-19-1w, dr 3710 ft.

PRATT COUNTY—Jones & O'Haver Lunt 1, csw nw 15-23-14w, dr 4255 ft.

KINGMAN COUNTY—D. P. Fleger's Ashcraft, cwl E½ 16-28-7w, dr 950 ft.

SEDGWICK COUNTY—Marland & Amerada's Sensroth 1, nwc 25-28-4w, dr 3022 ft. Wilson et al, Ottaway 1, sw nw 16-28-2w, rig. La Font et al's Carlton Bros. 1, c se sw 24-28-1e, sd 1685 ft.

KIOWA COUNTY—British American's Woodward 1, nec 35-27-17, dr 5009 ft.

KINGMAN COUNTY—White Eagle et al's Lorenz 1, c ne sw se 25-27-5w, dr 2160 ft.

SEDGWICK COUNTY—Plains Curry 1, se sw sw 2-27-1w, dr 3100 ft. C. B. Davis' Kinkead 1, nec 14-27-1e, UR 8-inch cas 3055 ft.

BUTLER COUNTY—Martin et al's Flanigan 1, c sw sw 29-37-3e ,rig.

GREENWOOD COUNTY — F. Konkay et al'sRock 1, ne nw ne 7-27-12e, spd and sd.

RENO COUNTY—Wilson et al's McPheeters 1, c s½ nw 22-26-8w, spd.

PRATT COUNTY—O'Haver & Jones Gareke 1, c ne cw 7-26-14w, dr 205 ft.

RENO COUNTY—Austin Drlg. Co's Strickey 1, swc nw 12-26-5w, dr 3725 ft.

SEDGWICK COUNTY — Washabaugh's Harrison 1, c nw ne ne 3-26-2w, dr 3421 ft. Travendar et al's McLean 1, se sw se 23-26-1w, rig. Boyles' et al's Sandusky 1, c nw ne se 34-26-1w, dr 2710 ft. Burnett's Davidson 1, c nw nw sw 27-26-1e, sd 3007 ft.

BUTLER COUNTY—Lario's Gordon 1, nec 15-26-3e, UR 3250 ft. Sinclair's Johnson 1, nec 16-26-3e, dr 1882 ft.

HODGEMAN COUNTY—Swain et al's Kenthorne 1, c nw 21-25-24w, sd 300 ft.

RENO COUNTY—Empire's Blitz 1, ne nw 36-25-4w, dr 1100 ft.

SEDGWICK COUNTY—Deering-Marshall's Dick 1, c sw 4-23-2w, dr 3575 ft. Twist et al's Joseph 1, 4-25-1w, td 1980 ft, abn.

BUTLER COUNTY—White Eagle's Bacholder 1, sw c, 17-25-3e, dr 2905 ft. Travis et al's Harrison 1, SEc 21-25-3e, dr 3145 ft. Millmack et al's Clearwater 1, swc 33-25-3e, chat 2725-50 ft, no show

RENO COUNTY—Skelly, Birkett 1, ne sw 30-24-7w, dr 3565 ft lime.

HARVEY COUNTY—Independent & Reserve's Moulds 1, c ne 7-24-1w, cas trble 2600 ft. Jolly & Ogg's Randall 1, nec 11-24-1w, sd 3444 ft, base lime 3388 ft. Payne et al's Ady 1, ne nw se 16-24-1e, dr 3375 ft. Walton's Neiman 1, c se sw 13-24-2e, dr 1235 ft. Liggett's Regier 1, c se nw se 2-23-2w, dr 2010 ft. Rosenthal et al's Ingalls 1, c nw sw 24-33-3w, D. & A td 4035 ft. McCulloch's Prouty 1, nw sw 3-23-1w, sd 2020 ft. Jolly & Ogg's Hupp 1, se ne 22-23-1w, sd 3220 ft. Margaret Gay Oil Co's Grouse 1, nw ne nw 29-23-1w, dr 3295 ft

HODGEMAN COUNTY—Phillips' Houseman 1, c nw ne 30-32-22w, dr 3440 ft.

RENO COUNTY—Witt et al's Olsen 1, se nw 14-22-6w, spd and sd.

HARVEY COUNTY—Roth & Fauret's Bombrowsky 1, nwc 26-22-1e, dr 3492 ft.

STAFFORD COUNTY—Phillips' Houghton 1, swc 20-21-12w, spd and sd.

PAWNEE COUNTY—F. C. Troupe's Lovett 1, cel ne ne 31-21-16w, sd 1560 ft.

RICE COUNTY—Brughers' Fair 1, c se ne ne 14-21-10w, rig.

McPHERSON COUNTY—Howard & Travers Cornelius 1, swc 7-21-4w, RU. McPherson's Fisk 1, sw ne ne 15-21-2w, dr 915 ft. Helmerich & Payne, Klassin 1, se ne ne 14-11-1w, dr 3190 ft.

RICE COUNTY—Miller & Detrick's Shumway 1, c sw 2-20-9w, dr 1855 ft. McCulloch's

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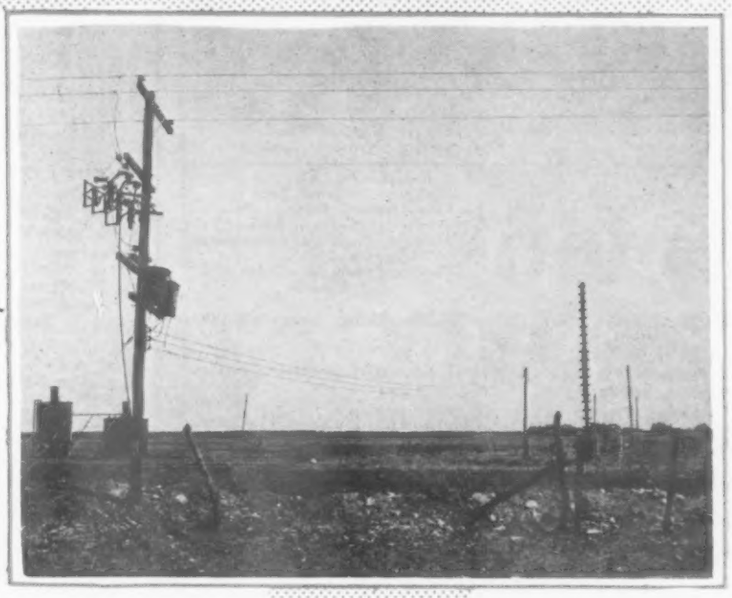

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300,000 Class A Preferred Shares (no par value), Participating, Non-Callable.

7,000,000 Common Shares (no par value)

300,000 Class A Common Shares (no par value)

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Williams 1, c ne 35-20-8w, RU. Derby's Johnson 1, c nw ne se 24-20-6w, fshg bit 2240 ft.

McPHERSON COUNTY—Mid-Kansas Kuns 1, c se sw 11-20-5w, dr 2835 ft. Millmack's Decker 1, NWc 11-20-5w, rig. Slick-Pryor & Lockhart, Gratten 1, c ne nw nw 34-20-3w, dr 2710 ft. Reynolds et al's Koehm 1, ne se ne 13-20-2w, rig. Lario's Diener 1, se sw 10-20-1w, dr 2315 ft.

MARION COUNTY—Empire's Reising 1, ne nw nw 34-20-2e, dr 2250 ft.

LYON COUNTY—Sheedy et al's Welch 1, nec 30-20-10e, dr 1850 ft.

RUSH COUNTY—Danciger O&G Co's Pinonka 1, c ne sw ne 17-19-17w, dr 3905 ft.

RICE COUNTY — Allison & Fitzwilliam's Poland 1, ne sw ne 36-19-8w, cellar. Millmack's Cain 1, se 29-19-7w, dr 2510 ft.

McPHERSON COUNTY — Transcontinental's Algiers 1, ne sw 1-19-5w, dr 2650 ft. Perry et al's Wade 1, c se 20-19-4w, dr 2600 ft. McPherson's Chinderg 1, c nw nw 18-19-2w, PB to chat.

MARION COUNTY—Davis et al's Bartel 1, se ne 1-19-1e, dr 3202 ft. Marshall et al's Higgins 1, nec 33-19-5e, rig.

LANE COUNTY—Robinson et al's Dickerson 1, swc nw se 11-18-27w, 8-inch cas 2625 ft.

NESS COUNTY—E. W. Marland's Moses 1, ne se 7-18-25w, UR 6-inch cas 3965 ft.

RUSH COUNTY—Sinclair's Seur 1, c se nw nw 8-18-17w, granite 3807-46 ft. D. & A. Millmack's Mehr 1, c nw 11-18-16w, spd.

McPHERSON COUNTY—E. W. Marland's Swanson 1, c ne sw ne 36-18-4w, HFW Viola lime 3582-3605 ft. McPherson County Gas Co.'s Rasmussen 1, swc 8-13-3w, dr 3170 ft; McPherson Oil Dev. Co's Sorenson 1, c se 23-18-2w, dr 1870 ft.

RUSH COUNTY — Danciger's Swindt 1, c sw se sw 22-17-17w, td 3850 ft. granite, D. & A. Central Commercial's Brock 1, nec sw sw 12-17-16w, spd and sd.

BARTON COUNTY—Slick et al's Sweeney 1, sw ne 23-17-11w, dr 250 ft.

ELLSWORTH COUNTY—Tatlock et al's Sacken 1, c sw se 25-17-9w, sd 6750 ft. Texas' Sherman 1, ne sw 16-17-18w, dr 2885 ft.

MARION COUNTY—White Eagle et al's Ucker 1, ne nw 24-17-2e, rog. American O&R Urie 1, sw nw 10-17-3e, dr 2040 ft.

LANE COUNTY — Blankenship Pet. Co.'s Shaeffer 1, nec ne 24-16-28w, spudded and sd.

BARTON COUNTY — Allison & Fitzwilliam's Unknown 1, nec 19-16-12w, ru.

SALINE COUNTY—Dixie's Thorstenberg 1, nw ne 10-16-3w, dr 2795 ft.

DICKINSON COUNTY—Hiatt & Durham, Went 1, nw 17-16-2e, rig.

TREGO COUNTY:—Prairie's Kutina 1, c ne sw ne 29-15-21w, dr 1460 ft.

ELLIS COUNTY — Rush Oil Co.'s Gatewood 1, nw 4-15-20w, fsh 2555 ft. Finney & Weimer, Freeman 1, nw se se 24-15-20w, spudded and sd.

RUSSELL COUNTY — Empire-Prairie's Becka 1, c se ne ne 23-15-14w, dr 3355 ft.

ELLSWORTH COUNTY — Templemen's Lanbangagen 1, c sw 20-15-5w, set 6-inch cas 2965 ft.

SALINE COUNTY—Austin's Olsen 1, c nw s wse 10-15-4w, dr 2340 ft.

DICKINSON COUNTY—Cress & Hawkey's Menli 1, nwc 12-15-2e, rig abn.

ELLIS COUNTY — Streeter & Stearns Laiker 1, se ne 26-13-20w.

TREGO COUNTY — Dixie & Amerada's Reitmeyer 1, c ne ne 19-14-21w, ru. P. & R. Corp.'s Kingsley 1, c se nw nw 24-14-21w, spudded.

ELLIS COUNTY—Midwest's Berens 36, se nw 12-13-16w, dr 2620 ft. Streeter & Stearn's Leiker 1, sw ne 26-13-20w, spudded and sd.

RUSSELL COUNTY — Cress & Hacke's Unknown 1, nec 6-13-12w, rog.

SALINE COUNTY—Twin Moulds, Hughes 1, cw½ ne nw 20-13-4w, sd 625 ft.

DICKINSON COUNTY — Koneger et al's Diche 1, c nw ne ne 17-13-4e, dr 633 ft.

WALLACE COUNTY—Menton & Entyre's Parker 1, c se nw sw 8-12-41w, rig.

TREGO COUNTY — Phillips' Spitz 1, se 24-12-25w, dr 1143 ft. Mid-Kansas' Ridgway 1, ne sw 28-12-21w, dr 2985 ft. Day's Guyler 1, c sw ne ne 36-12-21w, spudded and sd.

SHAWNEE COUNTY — Jenkins & Scott Haden 1, ne se 8-12-14e, td 750 ft, sd. Jen-

kins Scott, Haden 1, se nw 10-12-17e, spudded and sd.

TREGO COUNTY—Day's Unknown 1, c ne nw nw 2-11-21w, sd 2910 ft.

ELLIS COUNTY—Buren's et al's Fisher 1, nw se 4-11-20w, dr 655 ft.

SHAWNEE COUNTY—Omar's Allen 1, se ne nw 2-11-14e, dr 2295 ft.

OTTAWA COUNTY—Derby's Niemuller 1, c nw se 9-10-3e, dr 2100 ft.

SHAWNEE COUNTY — Jenkins & Scott Unknown 1, nw ne 28-10-15e, rig.

JEFFERSON COUNTY—Wichita Oil Co.'s Simpson 1, nw sw sw 19-10-17e, ru and sd.

ROCKS COUNTY — Burford & Brimm's Toxa 1, ne sw se 22-9-17w, spudded and sd. Krueger et al's Steis 1, c nw se sw 12-9-16w, spudded and sd.

GRAHAM COUNTY—Gulf Coast's Johnson 1, swc sw se 27-8-16w, dr 4103 ft.

CLAY COUNTY—Arkansas Fuel's Martin 1, se ne sw 24-8-4e, rig.

SHERMAN COUNTY — A. L. Hansen et al's Murray 1, ne se nw 22-7-40w, sd 3035 ft.

NORTON COUNTY—Mandelin's Unknown 1, c se sw sw 27-7-26w, spudded and sd.

OSBORNE COUNTY — Phillips' Grieve 1, nw se ne 6-7-12w, dr 3260 ft.

RILEY COUNTY — Derby-Skow Bros.' Lundstrum 1, ne 32-7-5e, dr 2246 ft.

OSBORNE COUNTY — Mid-Kansas' Boyce 1, se nw 8-6-13w, dr 3190 ft.

RILEY COUNTY—Gray et al's Smith 1, ne se 30-6-6e, sd 1970 ft.

SMITH COUNTY—Phillips' Clydevale 1, se nw 23-6-14w, dr 2770 ft.

WASHINGTON COUNTY—McCool & Vicent's Linn 1, nw ne 27-4-3e, sd 2300 ft.

SOUTHWEST TEXAS

ARANSAS COUNTY — United North & South Dev. Co.'s Edwards 1, dr 4957 ft.

BEXAR COUNTY — Mrs. Alice Garrett's Bass 1, on Espada road, cas set at 465 ft, capped well; James Scott Est., 1, lcn. Moore & Juan's Ellison 1, set cas at 1650 ft. Leon Creek Oil Co.'s A. Reininger 1, dr 1370 ft, Penn-Tex's Kate May 1, dr 300 ft. E. G. Porter's J. M. Watson 1, set cas about 2508 ft in Edwards lime. Swift & Fisher's Beck 1, Yelvington tract, 10 mi e of San Antonio, dr 650 ft.

BEE COUNTY—Houston Oil Co.'s McKinney 7, dr. Mission Drlg. Co.'s Ray 4, dr. The Texas Co.'s Ruhman 1, dr 70 ft. Trinity Drillers' Cattle Loom Co. 1, moving on.

BASTROP COUNTY—T. C. Hadley's Keil 1, dr. Howell et al's Weckham 1, sd 1710 ft. Pacific Oil Co.'s Donnell 1, dr. Sun Oil Co.'s Anderson 1, dr 1820 ft.

BROOKS COUNTY—G. W. French's Allen 6, dr 600 ft.

CALDWELL COUNTY—Buchanan, Al No. 1 Cude, show of oil at 1640 ft, scg set at 1633 ft. Bruner, Joe, B. R. McNeill 1, lcn. Calico Oil Co., Thomas 1, dr. Callahan et al, Willie Ellison 1, dr. Grayburg Oil Co., Cardwell 1, reported abn 1945 ft. Harpers et al Thomas 1, lcn. Humble Oil & Ref. Co.'s Floyd Gray 10-A, prod. 75 bbls; A. M. Briscoe 5, set csg at 2657 ft; Johnson 6, prod. 75 bbls; Floy Gray 9-C, spud in; Johnson 7, ru; Dye 8, prod. 300 bbls; Dye 9, spud in; Tiller 8, prod. 75 bbls. Luling Oil & Gas Co., Carter 1, wo., reported abn at 2870 ft in Edwards. Mag. Pet. Co., Merriweather 2, fsh at 2290 ft in Taylor marl. Marland Oil Co., Munster 1, dr about 3000 ft, chalk topped at 2912 ft. Radcliff et al, Cardwell 1, dr 1683 ft.

DE WITT COUNTY—McIntyre's Van Rooder 1, dr.

DUVAL COUNTY—Co-Operative Drilling Co.'s Dinn 3, lcn. Humble Oil & Ref. Co.'s 33 Koehler, set csg at 1776 ft, testing; Koehler 35, ru; Koehler 36, dr 255 ft. Mag. Pet. Co., Hahl 8, set csg 2333 ft; King-Harper 2, lcn; Lundell 1, dr 550 ft; Lundell 2, lcn. S. and O. Corp., Hahl 7, dk; Hahl 9, ru; Bowe 5, dr deeper. Southern Oil Co., Woods-Welder 1, dr. G. Partee, Moody 6, dr 2300 ft. Trapshooter Reilly, Hahl 1, blk 27, csg set 2335-ft, prep. to dr in.

FAYETTE COUNTY—Kelley et al's Burke 1, dr. Moore et al's Mouldon 1, sd at 2845 ft. Mouldon Oil Co.'s Kimper 1, sd at 225 ft. Mag. Pet. Co.'s Heinger 1, dr. National Oil Co.'s Heinger 1, dr.

GOLIAD COUNTY—Compton & Co.'s A. T. Franme 1, ru. Humble Oil & Ref. Co.'s Spangle 1, spud in. Mission Drilling Co.'s Ray 5, lcn; Ray 3, testing oil and gas show-

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ing at 4054-72 ft. Western Union Oil Co.'s Lucas 1, dr. Zoch et al's Kaufman 1, dr.

GONZALES COUNTY — Fort Bend Oil Co.'s Hamms 1, sd at 3312 ft. Acme Oil and Gas Properties H. K. Weber 1, dr. Bruner, Miller Bros. 1, sd for new boiler at 2904 ft. Green et al's Dix 1, dr. Hoffman et al's Burrer 1, dr. Finnell and Elam's J. F. Robinson 1, no report.

GUADALUPE COUNTY—All States Petroleum Company (Carl Bros.) Powers 1, dr. Empire Oil and Gas Co.'s 1, lcn. Grayburg Oil Co.'s Wells 1, dr 400 ft. Gulf Production Co.'s Searcy-Anderson 1, lcn; Tadlock 1, lcn; Mrs. Alice Garrett 1, to make lcn. Mag. Pet. Co.'s R. C. Appling 1, dr 2000 ft. Miles and Adams' Zaboroski 1, shut down. Pagenkoff & Kennon's O. J. Halm 1, spud in. Roxana Pet. Co.'s Denman 1, dr. Shell Pet. Corp.'s core dr in Darst-Creek area, L. G. Denman 1, to be tested. Sun Oil Co.'s James Manford 1, dr 2883 ft. Simms-Penn Co.'s Johnnie Manford 2, dr 2900 ft. Texas Co.'s Dallas-Wilson 2, shut down; Lemmy Anderson 2, sd at 660 ft; Lemmy Anderson 3, sd; Lemmy Anderson 4, lcn. Sinclair Oil & Gas Co., Koepp 1, dr 400 ft. Sights, Eugene et al Dehring 1, dr 2230 ft in chalk. H. M. Wurzbach et al's Guadalupe County 1 (Yates-Wilson), applied for permit to dr.

KLEBERG COUNTY—Humble Oil & Ref. Co.'s Kleberg 8, (Rosso tract), spud in.

JIM HOGG COUNTY — Alworth, Stevens and Hild, Garza 1, dr. Deep Rock Oil Co.'s Kelsey 1, sd. Mag. Pet. Co.'s Martinez 1, lcn. Hinnant 1, ru; J. Weil 1, lcn. Geo. S. Marshall, Holbein 4, dr; Holbein 5, set up tools. Moore-Milam Drlg. Co.'s Guerra 1, spudded in. Randado Oil Co.'s Palacios 35, standing at 100 ft. W. R. Shankle, Holbein 2, dr in.

JIM WELLS COUNTY—Mag. Pet. Co.'s Chas. Cock 1, dr 4080 ft.

KARNES COUNTY—Benedum and Trees' S. E. Cross 1, dr. J. O. Claypool's P .W. Rom 2, lcn. Barnett's 1, dr 275 ft.

LIVE OAK COUNTY — Chicago Cattle Loan Co.'s Mrs. Alice Smith 1, ru. Trinity Drillers, Inc.'s 1, to make lcn.

MAVERICK COUNTY — Rycade Oil Co.'s Chittim 3, prod. 10,000 cubic ft of gas at 5605 ft; Chittim 4, set csg at 5506 ft to test showing; Sullivan 4, prod. 500,000 cubic ft gas at 5638 ft; Chittim 5, dr 740 ft. Texas Co.'s Bandera 1, dr 2680 ft.

MEDINA COUNTY—T. N. T. Drlg. Co.'s Noonan 1, sd at 1250 ft; Mangold 1, ru.

NUECES COUNTY—Trinity Drillers et al, Thompkins 1, dr 3012 ft.

REFUGIO COUNTY—Benedum and Trees Oil Co.'s Rooke 3, dr. Dr. Hewitt, Cemetery 1, dr. Houston Oil Co.'s Fannie-Heard 6, set csg at 3680 ft; Wilson Heard 8, dr; Pratt-Rook 10, dr. Houston Gulf Gas Co.'s Ryals 5, dr in sand at 5060-75 ft; Shelly 6, dr; O'Brien 5, dr; Vance 1, dr; Fannie Heard 8, dr; Fannie Heard 4, showing of gas at 2039 ft. Independent O&G Co.'s O'Brien 1, dr 4270 ft; Reilly 1, 1 mile southwest, lcn. Korona Oil Co., M. West 1, set csg to test sand at 3650 ft; Reilly Heirs 2, dr. Mission Drlg. Co.'s Mitchell 2, ry, heavy rig at 2400 ft to test deep sand; Powell 1, ru heavy rig over old hole at 4508 ft; O'Donnell-Kinkendahl 1, ru; Fox 2, dr 1800 ft; Shelly 2, dr 750 ft. Morgan Oil Corp.'s City 2, dr 1500 ft; City 3, spud. Oigufer Oil Co.'s Ryals 3, lcn. W. L. Pearson et al's Fox heirs 2, dk. Saxet et al's 1, blk 97, Refugio town tract, dr; Serafino 1, dr; Fox Heirs 1, dr; C. Heard 10 dr. Sun Oil Co.'s Buckley 1, dr; Leisering 1, moving on tools. Texas Gas Co.'s Rogers Heirs 1, dr deeper.

STARR COUNTY — Smith-Adams' G. B. Welch 1, set csg at 531 ft. Milam Drlg. Co.'s R. Allen 5, dr. Texas Co.'s Guerra A-4, share 505-D, porcion 67, dr 2785 ft. U. S. Oil and Gas Co.'s Kelsey 1, standing at 80 ft.

VAL VERDE COUNTY—Dyare Bros. et al's Wilson 1, cement crevice at 3594 ft. Phantom Oil Co.'s Ingram 1, dr. Val Vert Oil Corp.'s Bassett 1, sd at 4009 ft.

VICTORIA COUNTY—Humble Oil & Ref. Co.'s Waelder 1, dr.

WEBB COUNTY—Foster Barnsely, Webter 8, dr. Crown Central Pet. Co.'s Garcia 2, dr 1775 ft. Houston Oil Co.'s Benavides 2-G, lcn. Usher Carson, Benavides 2, tested at 2535 ft. O. W. Killam's Billings 7, dr; Bruni 14, dk; Bruni 13, dr 2550 ft. J. J. O'Hern's Benavides 2, set csg at 2316 ft; Benavides 3, ru. Mag-Houston Oil Co.'s Benavides 2, prod. 30,000,000 cubic ft gas. Mag. Pet. Co.'s Valdez 1, dk; Valdez 2, lcn; M. Benavides 1, dr; Perez 1, lcn; Benavides 1-A, dr 1370 ft. L. W. Nelson's Moglia 2, set csg at 2300 ft. W. R. Shankle's Webster 2, dr.

WILSON COUNTY — Grayburg Oil Co.'s Degler 1, dr 2986 ft. Mrs. Alice Garrett's 1, to make lcn.

ZAPATA COUNTY—Blair & Acklen's Trevino 2, dr 700 ft. Blankenship et al's Trevino 1, dr 11 ft; Garza 1, gas show at 870 ft, dr 1150 ft; Montemayor 1, resumed dr. Buck & Coursey's Garza 1, sd at 1474 ft. Duval Oil Co. 1, dr. Sam Evans' Trevino 1, dr 1930 ft in sand. Hill et al's Vela 1, dr 1010 ft. Killam-Duggan's Cuellar 8, dr 1300 ft. O. W. Killam's Flores 2, dr 100 ft; Cuellar 17, dk. Mag. Pet. Co.'s R. G. Martinez 1, dr. Marts and Beavens, Trevino 1, showing of oil at 1724-28 ft. Nat. Oil Co.'s Adams 1, sd waiting on water. South Texas Prod. Co.'s Joe Jennings 6, ru. John Pappas Cuellar 2, dr 480 ft.

ZAVALLA COUNTY—Geo. R. Smith and Everett Anglin's Johnnie Davidson 1, prep. to move on.

MEXICO—Cia Petrolera Tamaulips, S. A. 1, El Soladito survey, Guerra area, dr.

ARKANSAS

Completions

COLUMBIA COUNTY—
Laskin et al, Dennis 1, 11-20-23 . . . * 3696

GARLAND COUNTY—
Chaywood Oil Co., Malvern Lbr. Co. 1, 17-2-17 . . . . . * 1668

OUACHITA COUNTY—
Artex Oil Co., Wilson A-1, 25-15-18 (second completion) 28 2873

PULASKI COUNTY—
Wonder State Dev. Co., Wilson 1, 21-2-11 . . . . . * 1544

ST. FRANCIS COUNTY—
W. F. Harris, Halbert 1, 32-4-4 . . . . * 500

UNION COUNTY—
Johnson-Gummer Oil Co., Cargile 1, 4-18-13 . . . . . * 3343

ASHLEY COUNTY—J. C. Marcum's McCarry 1, 10-19-4, sd repr rig, td 2760 ft.

COLUMBIA COUNTY — Talbert & Markle's Copeland 1, 31-19-19, se 10-inch cas 330 ft, dr 1475 ft. Laskin et al's Dennis 1, 11-20-23, sw abn, td 3696 ft. Helena O&G Co.'s Pickler 1, 19-19-22, TA 2795 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 35-13-5, fsh ds 2530 ft.

FAULKNER COUNTY—Gold Creek O & G Co's Stermer 1, 17-4-13, TA 3782 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Corp's McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, dr with tools 3174 ft. Chaywood Oil Co's Malvern Lbr. Co. 1, 17-2-17, dry abn td 1668 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, TA 1400 ft.

JOHNSON COUNTY—Blackwell O & G Wyver 1, 21-9-25, arr plug & perf td 5360. Ark. La. Drilling Co's Bynum 2, 12-10-24, set 6-in cas 3255 ft dr with tools 3443 ft.

LINCOLN COUNTY—Pine Prairie O & G Co's Carter 1, 33-10-6, arr resume dr 2176 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 31-12-31, TA 2941 ft. C. F. McDonald's Black 1, 12-13-28, sd 1541 ft. (corrected depth). Buck Oil Co's Taafe 1, 25-12-32, cemtd 12½-in cas 20 ft dr 1544 ft.

LOGAN COUNTY—Ark. La. Pipe Line Co's Hanna 1, 26-7-23, TA 3540 ft.

MADISON COUNTY — Phillips Pet. Co's Skinner 1, 11-14-25, tested 200,000 ft gas 63 ft sd 881 ft.

MILLER COUNTY—Lenz et al's Bossier Land Co. 1, dr around 2600 ft.

OUACHITA COUNTY—Copenhaver et al's Warnick 1, 2-15-17, sd 2190 ft. Flaucher et al's Bucks 1, 7-15-17, TA 2465 ft. McDonald's Fogle 1, 18-14-16, sd wo 2301 ft. Wesson et al's Booth 1, 12-15-19, sd 2203 ft. Artex Oil Co's Wilson A-1, 25-15-18, old well was pumping 10 bbls oil 20 bbls sw perf cas 2759-65 ft now pumping 28 bbls oil 20 bbls sw may rip cas td 2873 ft. Houston Oil Co's Wilson B-1, 25-15-18, coring 2757 ft. Atlantic O. P. Co's & E. M. Jones' Allen C-1, 25-15-18, lcn abn will not drill. Timberlake et al's Criner 1, 26-14-18, dr 1760 ft.

POPE COUNTY—Ark. La. Pipe Line Co's

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You need speed when you need an oil tank, You get it with a B. S. & B. PERFECTION. There's a SERVICE ARMY maintained in order to give you prompt and thorough service — and still you don't have to pay anything extra for it!

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ing at 4054-72 ft. Western Union Oil Co.'s Lucas 1, dr. Zoch et al's Kaufman 1, dr.

GONZALES COUNTY — Fort Bend Oil Co.'s Hamms 1, sd at 3312 ft. Acme Oil and Gas Properties H. K. Weber 1, dr. Bruner, Miller Bros. 1, sd for new boiler at 2904 ft. Green et al's Dix 1, dr. Hoffman et al's Burrer 1, dr. Finnell and Elam's J. F. Robinson 1, no report.

GUADALUPE COUNTY—All States Petroleum Company (Carl Bros.) Powers 1, dr. Empire Oil and Gas Co.'s 1, lcn. Grayburg Oil Co.'s Wells 1, dr 400 ft. Gulf Production Co.'s Searcy-Anderson 1, lcn; Tadlock 1, lcn; Mrs. Alice Garrett 1, to make lcn. Mag. Pet. Co.'s R. C. Appling 1, dr 2000 ft. Miles and Adams' Zaboroski 1, shut down. Pagenkoff & Kennon's O. J. Halm 1, spud in. Roxana Pet. Co.'s Denman 1, dr. Shell Pet. Corp.'s core dr in Darst-Creek area, L. G. Denman 1, to be tested. Sun Oil Co.'s James Manford 1, dr 2883 ft. Simms-Penn Co.'s Johnnie Manford 2, dr 2900 ft. Texas Co.'s Dallas-Wilson 2, shut down; Lemmy Anderson 2, sd at 660 ft; Lemmy Anderson 3, sd; Lemmy Anderson 4, lcn. Sinclair Oil & Gas Co., Koepp 1, dr 400 ft. Sights, Eugene et al Dehring 1, dr 2230 ft in chalk. H. M. Wurzbach et al's Guadalupe County 1 (Yates-Wilson), applied for permit to dr.

KLEBERG COUNTY—Humble Oil & Ref. Co.'s Kleberg 8, (Rosso tract), spud in.

JIM HOGG COUNTY — Alworth, Stevens and Hild, Garza 1, dr. Deep Rock Oil Co.'s Kelsey 1, sd. Mag. Pet. Co.'s Martinez 1, lcn. Hinnant 1, ru; J. Weil 1, lcn. Geo. S. Marshall, Holbein 4, dr; Holbein 5, set up tools. Moore-Milam Drlg. Co.'s Guerra 1, spudded in. Randado Oil Co.'s Palacios 35, standing at 100 ft. W. R. Shankle, Holbein 2, dr in.

JIM WELLS COUNTY—Mag. Pet. Co.'s Chas. Cock 1, dr 4080 ft.

KARNES COUNTY—Benedum and Trees' S. E. Cross 1, dr. J. O. Claypool's P .W. Rom 2, lcn. Barnett's 1, dr 275 ft.

LIVE OAK COUNTY — Chicago Cattle Loan Co.'s Mrs. Alice Smith 1, ru. Trinity Drillers, Inc.'s 1, to make lcn.

MAVERICK COUNTY — Rycade Oil Co.'s Chittim 3, prod. 10,000 cubic ft of gas at 5605 ft; Chittim 4, set csg at 5506 ft to test showing; Sullivan 4, prod. 500,000 cubic ft gas at 5638 ft; Chittim 5, dr 740 ft. Texas Co.'s Bandera 1, dr 2680 ft.

MEDINA COUNTY—T. N. T. Drlg. Co.'s Noonan 1, sd at 1250 ft; Mangold 1, ru.

NUECES COUNTY—Trinity Drillers et al, Thompkins 1, dr 3012 ft.

REFUGIO COUNTY—Benedum and Trees Oil Co.'s Rooke 3, dr. Dr. Hewitt, Cemetery 1, dr. Houston Oil Co.'s Fannie-Heard 6, set csg at 3680 ft; Wilson Heard 8, dr; Pratt-Rook 10, dr. Houston Gulf Gas Co.'s Ryals 5, dr in sand at 5060-75 ft; Shelly 6, dr; O'Brien 5, dr; Vance 1, dr; Fannie Heard 8, dr; Fannie Heard 4, showing of gas at 2039 ft. Independent O&G Co.'s O'Brien 1, dr 4270 ft; Reilly 1, 1 mile southwest, lcn. Korona Oil Co., M. West 1, set csg to test sand at 3650 ft; Reilly Heirs 2, dr. Mission Drlg. Co.'s Mitchell 2, ry, heavy rig at 2400 ft to test deep sand; Powell 1, ru heavy rig over old hole at 4508 ft; O'Donnell-Kinkendahl 1, ru; Fox 2, dr 1800 ft; Shelly 2, dr 750 ft. Morgan Oil Corp.'s City 2, dr 1500 ft; City 3, spud. Oigufer Oil Co.'s Ryals 3, lcn. W. L. Pearson et al's Fox heirs 2, dk. Saxet et al's 1, blk 97, Refugio town tract, dr; Serafino 1, dr; Fox Heirs 1, dr; C. Heard 10 dr. Sun Oil Co.'s Buckley 1, dr; Leisering 1, moving on tools. Texas Gas Co.'s Rogers Heirs 1, dr deeper.

STARR COUNTY — Smith-Adams' G. B. Welch 1, set csg at 531 ft. Milam Drlg. Co.'s R. Allen 5, dr. Texas Co.'s Guerra A-4, share 505-D, porcion 67, dr 2785 ft. U. S. Oil and Gas Co.'s Kelsey 1, standing at 80 ft.

VAL VERDE COUNTY—Dyare Bros. et al's Wilson 1, cement crevice at 3594 ft. Phantom Oil Co.'s Ingram 1, dr. Val Vert Oil Corp.'s Bassett 1, sd at 4009 ft.

VICTORIA COUNTY—Humble Oil & Ref. Co.'s Waelder 1, dr.

WEBB COUNTY—Foster Barnsely, Webter 8, dr. Crown Central Pet. Co.'s Garcia 2, dr 1775 ft. Houston Oil Co.'s Benavides 2-G, lcn. Usher Carson, Benavides 2, tested at 2535 ft. O. W. Killam's Billings 7, dr; Bruni 14, dk; Bruni 13, dr 2550 ft. J. J. O'Hern's Benavides 2, set csg at 2316 ft; Benavides 3, ru. Mag-Houston Oil Co.'s Benavides 2, prod. 30,000,000 cubic ft gas. Mag. Pet. Co.'s Valdez 1, dk; Valdez 2, lcn; M. Benavides 1, dr; Perez 1, lcn; Benavides 1-A, dr 1370 ft. L. W. Nelson's Moglia 2, set csg at 2300 ft. W. R. Shankle's Webster 2, dr.

WILSON COUNTY — Grayburg Oil Co.'s Degler 1, dr 2986 ft. Mrs. Alice Garrett's 1, to make lcn.

ZAPATA COUNTY—Blair & Acklen's Trevino 2, dr 700 ft. Blankenship et al's Trevino 1, dr 11 ft; Garza 1, gas show at 870 ft, dr 1150 ft; Montemayor 1, resumed dr. Buck & Coursey's Garza 1, sd at 1474 ft. Duval Oil Co. 1, dr. Sam Evans' Trevino 1, dr 1930 ft in sand. Hill et al's Vela 1, dr 1010 ft. Killam-Duggan's Cuellar 8, dr 1300 ft. O. W. Killam's Flores 2, dr 100 ft; Cuellar 17, dk. Mag. Pet. Co.'s R. G. Martinez 1, dr. Marts and Beavens, Trevino 1, showing of oil at 1724-28 ft. Nat. Oil Co.'s Adams 1, sd waiting on water. South Texas Prod. Co.'s Joe Jennings 6, ru. John Pappas Cuellar 2, dr 480 ft.

ZAVALLA COUNTY—Geo. R. Smith and Everett Anglin's Johnnie Davidson 1, prep. to move on.

MEXICO—Cia Petrolera Tamaulips, S. A. 1, El Soladito survey, Guerra area, dr.

ARKANSAS

Completions

COLUMBIA COUNTY—		
Laskin et al, Dennis 1, 11-20-23	*	3696
GARLAND COUNTY—		
Chaywood Oil Co., Malvern Lbr. Co. 1, 17-2-17	*	1668
OUACHITA COUNTY—		
Artex Oil Co., Wilson A-1, 25-15-18 (second completion)	28	2873
PULASKI COUNTY—		
Wonder State Dev. Co., Wilson 1, 21-2-11	*	1544
ST. FRANCIS COUNTY—		
W. F. Harris, Halbert 1, 32-4-4	*	500
UNION COUNTY—		
Johnson-Gummer Oil Co., Cargile 1, 4-18-13	*	3343

ASHLEY COUNTY—J. C. Marcum's McCarry 1, 10-19-4, sd repr rig, td 2760 ft.

COLUMBIA COUNTY — Talbert & Markle's Copeland 1, 34-19-19, se 10-inch cas 330 ft, dr 1475 ft. Laskin et al's Dennis 1, 11-20-23, sw abn, td 3696 ft. Helena O&G Co.'s Pickler 1, 19-19-22, TA 2795 ft.

DREW COUNTY—McClintock & Goedke's Ogle 1, 35-13-5, fsh ds 2530 ft.

FAULKNER COUNTY—Gold Creek O & G Co's Stermer 1, 17-4-13, TA 3782 ft.

FRANKLIN COUNTY — Ozark Nat. Gas Corp's McElroy 1, 15-8-27, lcn.

GARLAND COUNTY—H. H. Given's Garrett 1, 1-13-19w, dr with tools 3174 ft. Chaywood Oil Co's Malvern Lbr. Co. 1, 17-2-17, dry abn td 1668 ft.

GRANT COUNTY—Jones & Watkins' Meek 1, 5-4-11, TA 1400 ft.

JOHNSON COUNTY—Blackwell O & G Wyver 1, 21-9-25, arr plug & perf td 5360. Ark. La. Drilling Co's Bynum 2, 12-10-24, set 6-in cas 3255 ft dr with tools 3443 ft.

LINCOLN COUNTY—Pine Prairie O & G Co's Carter 1, 33-10-6, arr resume dr 2176 ft.

LITTLE RIVER COUNTY—Grote et al's Allen 1, 31-12-31, TA 2941 ft. C. F. McDonald's Black 1, 12-13-28, sd 1541 ft. (corrected depth). Buck Oil Co's Taafe 1, 25-12-32, cemtd 12½-in cas 20 ft dr 1544 ft.

LOGAN COUNTY—Ark. La. Pipe Line Co's Hanna 1, 26-7-23, TA 3540 ft.

MADISON COUNTY — Phillips Pet. Co's Skinner 1, 11-14-25, tested 200,000 ft gas 63 ft sd 881 ft.

MILLER COUNTY—Lenz et al's Bossier Land Co. 1, dr around 2600 ft.

OUACHITA COUNTY—Copenhaver et al's Warnick 1, 2-15-17, sd 2190 ft. Flaucher et al's Bucks 1, 7-15-17, TA 2465 ft. McDonald's Fogle 1, 18-14-16, sd wo 2301 ft. Wesson et al's Booth 1, 12-15-19, sd 2203 ft. Artex Oil Co's Wilson A-1, 25-15-18, old well was pumping 10 bbls oil 20 bbls sw perf cas 2759-65 ft now pumping 28 bbls oil 20 bbls sw may rip cas td 2873 ft. Houston Oil Co's Wilson B-1, 25-15-18, coring 2757 ft. Atlantic O. P. Co's & E. M. Jones' Allen C-1, 25-15-18, lcn abn will not drill. Timberlake et al's Criner 1, 26-14-18, dr 1760 ft.

POPE COUNTY—Ark. La. Pipe Line Co's

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ESTABLISHED 1900

McFadden 1, 15-9-21, rig up (report of dr in error).

PRAIRIE COUNTY — Transcontinental Oil Co's Novack 1, 36-2-6, rig up.

PULASKI COUNTY—Wonder State Dev. Co's Wilson 1, 21-2-11, dry abn td 1544 ft.

SEBASTIAN COUNTY — Lavaca O & G Co's Cason 3, 21-8-30, dk.

ST. FRANCIS COUNTY — W. F. Harris' Halbert 1, 32-4-4, dry abn td 500 ft.

UNION COUNTY—S. Arrendale's Gallagher & Nelson 1, 18-18-17, sd 2268 ft. E. M. Jones' Loutre Shingle 1, 17-19-14, rig up. Johnson-Gummer Oil Co's Cargile 1, 4-18-13, dry abn td 3343 ft. W. M. Coates, Tr.'s McDuffie 1, 32-19-16, set 6⅝-in cas 3934 ft td 4056 ft. T. J. Woodley's First National Bank 1, 34-19-18, dk. J. P. Hawkins et al's Goodwin 1, 6-17-15, sd 2575 ft. Addy & Modisette's Union Sawmill 1, 25-19-12, lcn abn will not drill. E. M. Jones' Henry Murphy 1, 34-19-14, dr 3093 ft. Simon et al's Welch 1, 30-19-17, lcn abn will not drill. O. W. Estes' Felsenthal 1, 2-18-15, tested 6 joints oil & mud 2110-51 ft set 6-in cas 2110 ft. Ark. Drilling Co's Norris 1, 17-18-12, dr 20 ft. Shell Pet Corp's Carroll 1, 19-18-16, rig up.

WASHINGTON COUNTY—Lincoln Lease Holding Co's Townsite 1, 30-15-32, sd repr rig 1050 ft. C. H. Willoughby's Jones 1, 34-16-30, sd 1900 ft. O'Hara & Shetterley's Boyd 1, 12-16-32, sd 150 ft.

WHITE COUNTY—Letona Synd's Letona 1, 35-9-8, dr caving shale 3500 ft.

VAN BUREN COUNTY—J. S. Martin's Scanland 1, 5-9-13, sd 50 ft.

NORTH CALIFORNIA

Completions

SIMI—		
Shell Oil Co's Marr 1	*	3922
GOLETA—		
Standard Oil Co's Edwards 3	*	2490
ORELLA—		
Shell's Rutherford 1, 36-5-31	*	6185
MT. POSO—		
Bowles Oil Co's Buttram 1, 24-27-28	*	1205

KERN COUNTY

BELRIDGE—Casa Mira Oil Co's Theta 1, 20-28-20, cmt 6¼-in cas 1315 ft td 1690 ft. Ozena Oil Co's 2, 27-29-21, dr gray sand 1880 ft. Ventura-Pacific Oil Co's 1, 18-29-22, producing water and some oil on test, td 3455 ft. K. C. Wallace's 1, 32-29-21, dr brown shale 2177 ft.

BENA—Elmer Oil Co's 1, 15-30-30, dr shale 3266 ft.

BUENA VISTA LAKE—Ohio's Pyramid 1, 20-32-25, dr shale 5600 ft.

BUTTONWILLOW — Milham Exploration Co's Kern 6, 8-28-23, sr 4500 ft.

EDISON—Symark Oil Co's 1, 24-29-29, dr shale 2056 ft. Texas' Newman 1, 23-29-29, dr hard gray sand 1475 ft.

GOULD HILLS—Elmer Oil Co's 1, 2-29-20, dr brown shale 3950 ft. J. H. Kennedy's 1, 5-29-21, ur 500 ft.

KERN RIVER—Section 26 Oil Co's 1, 26-28-28, will deepen from 1875 ft.

LERDO — Shell's An-1, 5-29-27, coring 4600 ft.

MIDWAY—Texas' Gore 4, 21-32-22, dr shale 1005 ft.

POSO CREEK—Petroleum Securities' Glide 17, 21-27-28, 10¾-in cas cmt 1585 ft td 1595 ft.

ROSEDALE—Elmer Oil Co's Houghton 1-A, 33-29-26, dr gray sand 4900 ft. General Petroleum's KCL-1, 13-29-26, dr gray sand 1000 ft.

SHALE HILLS—Day Oil Co's 1-A, 1-27-28, dr 1500 ft.

SAN EMIDIO—Union's KCY-2, co 3665 ft.

SUNSET—Union's Fried 1, 8-11-23, dr shale 1600 ft.

TEMBLOR HILLS—Blank et al's 1 dr 300 ft. Union's Williams 1, 22-32-23, dr shale 2900 ft.

SANTA BARBARA COUNTY

ARLIGHT—Standard's Sudden 1, 35-6-26, dr hard sand 1705 ft.

BUELL—Union's Buell 1, re-dr 1515 ft.

CARPENTERIA — Continental's Bailard 1, fsh 4460 ft.

CASMALIA—Wildcat Oil and Royalty Co. 1, 20-10-35, dr shale 2665 ft.

GIBRALTAR — Pacific Western Oil Co. Dam 1, 14-5-27, dr 300 ft.

GOLETA—F. C. Anderson's Langman 1, 10-4-28, dr out cmt td 4640 ft. Al Carrey

Wright 1, 1-4-28, rigging up. General Petroleum's More 2, 21-4-28, lcn. Petroleum Securities' Bishop 1, dr 5088 ft. Standard's Hospital 1, new lcn.

ORELLA—General Petroleum's Erburu 1, 5-4-30, made some oil on test will deepen from 1350 ft. Shell's Rutherford 1, 36-5-31 abn 6185 ft.

POINT CONCEPCION—Standard's Gerber 1, sd 2430 ft. Western Gulf's Hollister 2, dr hard shale and sand 1600 ft.

SAN MARCOS—California Properties' Fortune 1, 3-4-28, fsh for dr pipe 1020 ft.

SANTA BARBARA—Channell Oil and Dev. Co's Fellowship 1, 29-4-27, deepening from 2140 ft. Lincoln Drilling Co's Medcli° 1, dr shale 2160 ft.

SUMMERLAND—Shell's Fithian 1, rig.

SURF—Keystone Pet Corp's True Ranch 1, dr shale and limestone 2855 ft.

VENTURA COUNTY

CAMARILLO—Smith and Finch's 1, 5-1-20, dr 1100 ft.

CASITAS—Miley Oil Co's Casitas 2-A, dr hard sand 1818 ft.

LOCKWOOD — Lockwood Valley Oil Co's 1, 28-8-21, dr shale 475 ft.

OJAI—California-Ventura Oil Co's LaCrosse 1 dr shale and oil sand 3900 ft. Continental's Sulphur Mountain 3, dr shale 3558 ft.

RINCON—Associated's Snowball 1, 19-4-24, grading for rig.

SANTA PAULA—W. W. Bryant's Anlauf 4, 21-4-21, dr 150 ft. San Pedro-Pt. Fermin's Kellerman 1, 13-4-21, sr 1170 ft.

SATICOY—Standard's Citrus 5, 10-2-22, cmt off dr pipe td 8155 ft.

MISCELLANEOUS

FRESNO COUNTY—Currency Pet Co's 1, 28-21-14, dr shale 2300 ft. Garney Pet Co's Braden 1, 19-23-15, rigging up rotary. Hornaday and Huggins' 1, 32-14-28, fsh 4890 ft Pennsylvania-Western Oil Co's 1, 24-21-18, dr 1070 ft. Petroleum Securities' Ladd 1, 28-20-16, 9-in cas cmt 6450 ft. Rio Grande's 1, 14-13-17, rigging up rotary. Southern Oil and Gas Co's Peterson 1, 7-21-21, dr shale 4650 ft.

KINGS COUNTY—H. B. Porter's 1, 9-24-17, dr shale 1680 ft.

MADERA COUNTY — George F. Getty's Gill 1, 18-13-16, lcn.

MENDOCINO COUNTY—Twin State Oil Co's Soldani 1, 14-12-17, dr hard sand 760 ft.

MONTEREY COUNTY — Standard's Piedmont 1, 23-22-7, dr hard sand and shale 800 ft. Union's Paige 1, 8-22-8, 15⅝-in cas cmt 2070 ft. Shell's Dudley 1, 15-22-9, coring 3985 ft.

SAN JOAQUIN COUNTY — Barnhart Oil Trust's Gilbert 1, 3-2-10, dr 275 ft.

SAN LUIS OBISPO COUNTY—Panorama Oil Co's Vishu 1, 7-31-21, fsh 4010 ft. Paso Robles Oil Co's Emerick 1, 34-27-15, dr shale 3318 ft. Latin-American Oil Co's Upton 1, 31-27-15, dr shale 3365 ft. Midwest Oil Co's Hately 1, 34-31-15, dr on iron 2215 ft. Pismo Oil Co's Pricco 2-A, 5-31-13, dr shale 220 ft. Texas Pacific Coal and Oil Co's 1, 25-32-14, sd rr bit 3135 ft. Union's Chandler 1, 12-32-14, dr hard sand 4411 ft; Russ 1, 34-32-15, re-dr 3700 ft.

TULARE COUNTY — Big Four Drilling Co's 1, 29-32-27, m 4330 ft. Roy White's 1, 8-23-26, dr shale 935 ft.

SOUTH CALIFORNIA

CHATSWORTH—Russell Pet Co's Joughin 2, 23-3-17, dr shale 2235 ft.

COMPTON—Big Boy Drilling Co's Vedder 1, lcn. California Well Drilling Co's Del Amo 1, co 8500 ft.

FULLERTON — Shell's Bastanchury 1, dr hard sand 5950 ft.

HAWTHORNE — Standard's Freeman 1, dr dr hard shale and sand 7525 ft.

HUNTINGTON BEACH—Featherstone and Preston's Borchard 1, dr blus shale 3818 ft.

NEWHALL—P. B. Anderson's 1, showing oil and water, td 560 ft.

NEWPORT—Mesa Pet Corp's B. G. 1, dr 4905 ft. Oilwell Engineering Co's Interstate 2, 8¼-in cas cmt 2780 ft td 2800 ft.

PIRU—Coastline Oil Co's Mazie 1, dr shale 1313 ft.

POINT DUME — Marblehead Land Co's Rindge 3, ready to sp.

PUENTE—R. C. Rucker's Grazide 1, 8¼-in

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SEAL BEACH—Shell's Alamitos Land Co's 1, cln.

LOS ANGELES — Burlingham Pet Corp's Hamm 1, making prod test td 2190 ft. George Hammers' Stallman 1, dr shale 700 ft.

TELEGRAPH CANYON—Union's Rimpau 1, dr hard shale 1328 ft.

TORRANCE—Archer Oil Co's 1, dr shale 1328 ft.

VENICE—Ohio Oil Co's Gun Club 1, dr sandy shale 5176 ft.

RIVERSIDE COUNTY — Hall Pet Co's Watt 2, sd 675 ft.

SAN BERNARDINO COUNTY—Urmi Oil Co's Schuh-Zellers 1, changing to rotary 590 ft. Malhala Oil and Gas Co's 1, cmt 6¼-in cas 3700 ft td 4010 ft.

SAN DIEGO COUNTY — Borderland Exploration Co's 1, dr 1115 ft. S. S. Turner's Baler 1, dr hard sand 2110 ft.

MOUNTAIN STATES

WYOMING

BIG HORN—P. & R., 3, 24-56-98, dr 4216 ft.

CARBON—P. & R., Grenville 3, 28-21-86, dr 760 ft., hfw.

FREMONT—P. & R., Muskrat 7, 17-33-91, diamond dr 101 ft. Kinney-Coastal, 22-3-1, more wet gas 3377 ft. Texas Prod. Co., State 1, 36-34-95, straightening crooked hole back to 20000 ft.

HOT SPRINGS—Texas Prod. Co., sw 23-45n-100w, bailing water 3710 ft. Midwest 8, 6-44-98, dr 1008 ft. Gebo Cons., 23-43-95, no report. Ohio, Smith 1, 9-46-99, spudding.

LINCOLN—Midwest, Grey's River 1, 25-37-117, delayed 1636 ft.

PARK — P. & R. Pitchfork 1, 14-48-102, standing cem 1898 ft. Midwest, Rosenburg 1, 26-58-98, dr 2004 ft. Ohio, Burlington 1, 21-53-101, changing to rotary 1347 ft. Resolute Oil Co., 17-27-101, dr 3875 ft.

SWEETWATER — Mtn. Fuel Supply Co., Tucker 1, 18-13-99, dr 2955 ft. Mtn. Fuel Supply, Cappers 1, 2-19-104, dr 650 ft. Mtn. Fuel Supply, U. P. 1, 13-19-104, riging. Montacal-Associated, twp 16n, range 104w, mvg in.

UINTA — California Co., U. P. 1, 7-17n-119w, dr 4365 ft. Park City Oil Co., Christenson 1, 6-15n-113w, standing. Doheny interests, 6-14-118, dr.

WESTON—Wyo. Drlg. Synd., 15-44-64, sd 5000 ft, waiting for orders. Gose Synd., 28-47-64, resum at 5000 ft. Fiddler Creek Synd., 11-45-64, cav at 950 ft.

NEW MEXICO

Completions

LEA COUNTY, Hobbs High Dist.—		
Midwest Ref. Co., Leech 24, 15-19s-38e	1250	4150
Humble O. & R. Co., Bowers 1, 30-15-38	400	3270
Walker et al, Terry 1, se 10-19s-38e	500	4155

CHAVES—Warman Oil Trust, 1, sw 23-13-24, rig burned. Cactus Prod. Co., Sullivan 1, 14-10s-28e, dr 635 ft.

DE BACA—Matador Oil Co., State 1, sw 6-4n-20e, ur for water so 2705 ft. Pittsburg Oil Co., 1, ne 16-1s-27e, wait for cas 4506 ft. Transcontinental, McWhorter 1, 6-35-22e, show new gas 4578 ft.

GUADALUPE—Los Angeles-Hollywood Oil Synd., McMullen 1, sw 24-5n-16e, skd rig and spd.

LEA — Midwest, Gregory 22, sw 31-25-37, prep to deepen from 3320 ft. Gypsy Oil Co., Mattern 1, 24-21-36, ur to 3950 ft. Texas, Moberly 1, se 17-26-37, sd 3542 ft. Empire Gas & Fuel Co., Closson 1, se 6-22-36, dr 3597 ft. Texas, State 1, 2-21-33, ready to spud. Empire Gas &Fuel Co., State 2B, se 5-21s-35e, dr 1820 ft. Ohio Oil Co., State 1, 9-13-38, dr 3600 ft. Buell & Hagen, State 1, ne 14-11s-35e, dr 3230 ft. Conoco, State 1, 1-21-33, dr 220 ft. Conoco, Myers 1, sw 17-21-36e, change to rotary. Conoco, Meyer 1, nw 28-22s-36e, dr 3210 ft. Conoco, Wells 1, ne 11-25-36, plug back from 3560 ft. Shell Pete Corp., Terry 1, ne 22-18-38, dr 3015 ft. Humble O. & R. Co., Lindley 1B, se 14-25-36, show oil 3175 ft. Rector Oil Co., King 1, sw 27-25-32e, dr 3709 ft. Texas Pacific C. & O. Co., State 2, sw 21-22-36, hole caving 3675 ft. Magnolia Pete Co., Lindley 1, ne 26-25-36, swedging pipe 2960 ft. Maljamar O. & G. Corp., Basie 2, ne 21-17-3e, dr 3625 ft. Reynolds Drlg. Co., Merchant 1, nw 15-22-34e, dr 2265 ft. Penn Oil Co., State 1, ne 21-19s-36e, dr 540 ft. Bordages et al, Hughes 1, 27-19s38e, try so water, td 4012 ft. Morton et al, State 1, nw 32-11s-38e, dr 1975 ft. Barnsdall Corp., 1, 8-17-38e, ready to spud.

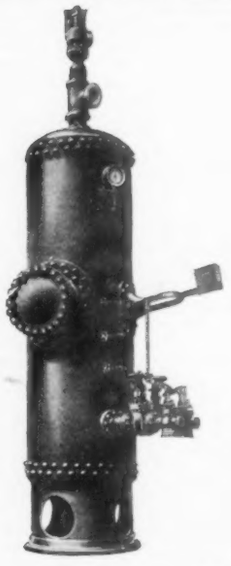
McKINLEY—J. W. Halsell, Santa Fe 1, 17-19-9, dr 2612 ft. San Juan C. & O. Co., 1, se 27-18n-9w, sd 2204 ft. Wms et al., A. T. S. F. 1, sw 19-18n-8w, dr 1565 ft.

ROOSEVELT—Smith & Sloan, Lovern 1, se 4-3s-36, abn 4512 ft.

RIO ARRIBA—Berringer et al., Hartman 1, ne 8-29-7, dr 825 ft.

SAN JUAN — Dorothy Oil Co., 29-30-9, stand 870 ft. Kutz Canon O. & G. Co., Day 1, 20-22-10, dr 960 ft. Blackrock Oil Co., 1, sw 11-25-13, wait for extension of time, td 1550 ft. Angel Peak Oil Co., Kutz Canon 1, 11-28n-11w, sdtr lost bailer. Greathouse et al, Roderick 1, sw 11-22-14, prep to run 6⅝-in. cas to so water 700 ft. Childers Drlg & Prod. Co., Westwater 2, nw 34-31-18, sd. Reserve Oil Co., Shaffer 2, ne 1-21-14, dr 675 ft.

SAN MIGUEL — Pioneer O. & G. Co.,



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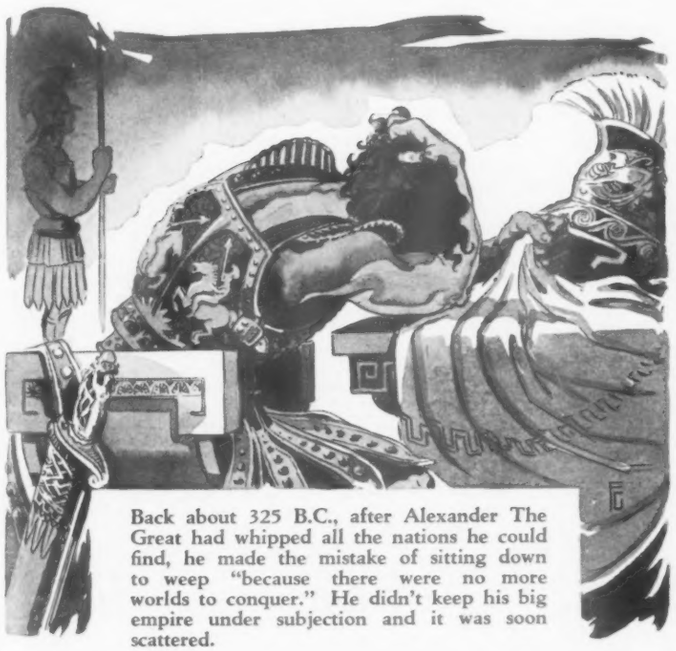

Back about 325 B.C., after Alexander The Great had whipped all the nations he could find, he made the mistake of sitting down to weep "because there were no more worlds to conquer." He didn't keep his big empire under subjection and it was soon scattered.

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Reg. U. S. Pat. Off.

Thunderbird 1, nw 14-15-16, dr 2125 ft. Starr Oil Co., Adams 1, ne 25-17-16, dr 2555 ft. Cibola Pete Co., Gov't 1, sw 19-13n-14e, spudding 25 ft.

SOCORRO — Lockhart & Co., 2, 14-35-6e, 15½-in set at 275 ft.

TORRANCE—Williams et al, Staplin 1, ne 16-8n-10w, dr 950 ft.

VALENCIA—Rio Puerco Oil Co., N. M.-Ariz Land Co., 2, 13-6-2, wait pipe 3145 ft, water shortage. Acme Oil Co., N. M.-Ariz Land Co., 1, 26-6-3, dr 4055 ft.

COLORADO

BENT—Continental, Pipe Springs 1, se 27-29-49, sd 5067 ft, water trouble.

DELTA—Crawford O. & G. Co., ne 28-15s-1w, dr 350 ft.

DOLORES—Transcontinental, Glade 1, nw 30-41-16, fsh 4005 ft.

ELBERT—Belmont Oil Co., Maher 1, sw 4-6s-59w, carry 6⅝-inch at 3650 ft.

JACKSON—Midwest, Rich 21X, nw 9-6-8, dr 2945 ft. P. & R., Hendershot 1, 2-6-81, ur to 2715 ft.

JEFFERSON—Ruby Hill O&G Co., Braden 1, se 14-4s-69w, carry 6¼-in. at 3481 ft.

LAS ANIMAS—Trinidad Dev. Co., Flontz 1, sw 23-32-63, dr 1575 ft. Parker Club-Konney Coastal Fee 1, 14-4s-58, dr 3678 ft.

LARIMER — Barrows et al, 7-11s-68w, sd 2000 ft. Standard of Colo., Hertha 1, 21-4n-69, rig.

LA PLATA—Royal P. & R. Red Mesa 1, 27-33-12, sd 360 ft. Detroit Oil Assn., Olbert 1, sw 9-35-12w, fsh 1970 ft.

LINCOLN—Kelly Oil Co., State 1, ne 36-14-57, stand 2480 ft.

MESA—Argo Oil Co., Hoel 1, ne 23, mvg in.

MOFFAT—McLaughline et al, Wms 1, 2-3-91, dr 4241 ft. McCormick et al., Sales 1, se 28-4n-92, dr 3215 ft. Vermillion O. & G. Synd., 1, se 23-9n-100w, dr 715 ft.

MONTROSE—Uncompaghre O. & G. Co., Colo. Title & Trust 1, 27-50-10, stand 2070 ft.

MONTEZUMA—Hallet et al., 1, sw 14-36-14, sd 50 ft.

PUEBLO—Boone O. & G. Co., Ritter 1, 38-18-60, sdtr 3050 ft.

RIO BLANCO—White Eagle, Fordham 1A, sw 9-2-96, erecting new rig, 2870 ft. Texas Prod. Co., Potter 1, sw 30-2n-96w, dr 3994 ft.

ROUTT—Midwest, 10, nw 4-7-86, dr 1638 ft.

YUMA—Major Pete, Black Wolf 1A, sw 7-2-43, stand 1535 ft. Phillips, Andrews 1, nw 3-2-42, dr 4015 ft.

WASHINGTON—Donohoe et al, Middlemist 1, se 14-4s-56w, dr 400 ft.

WELD—Platte Valley Pete Corp., Patterson 1, sw 23-8n-61w, carry. 4¾-in. 4421 ft.

MONTANA

CARBON—Ohhio Oil Co., N. P. 2, 11-7s-21e, dr 3860 ft.

CASCADE—O'Neill, Betts 1, ne 11-21-3e, abn 525 ft.

CUSTER—Montana Belle O. & G. Co., 28-8n-45e, dr 3135 ft.

FERGUS—Melton Corp., sw 24-21n-17e, fsh.

GALLTINE—California Co., Ringling 1, 35-5n-7e, dr 2416 ft.

GARFIELD—Montana Corp., 36-16n-38e, dr 1500 ft.

GLACIER—Jos. Drumheller et al, Yunck 1, nw 1-34-6w, shooting; more oil showing.

HILL—Jones Oil Co., Brown's Coulee 1, nw 32-34-14e, ur 12½-in. at 3110 ft.

LIBERTY—Square Deal Oil Co., Federal Land Bank 1, sw 1-32-7e, strmng 6-in., td 3190 ft. Bear's Den, Watford 1, 17-36-6e, shot and co 2545 ft. Thompson, Thompson 1, 7-34-4e, ur pipe 1720 ft.

PETROLEUM — Minnesota-Flatwillow Oil Co., 2, sw 5-12-25e, ur. Minnesota-Flatwillow 3, se 5-12-25, rigged.

PONDERA—Hammond et al, Katen 1, 24-26-1w, cas 1701 ft. Butte Synd., Meuli 1, ne 15-29-1w, dr 1850 ft. Valier Villiams Oil Co., 7-29-4w, dr 300 ft.

SWEETGRASS—Carter Oil Co., Sixshooter 1, 17-3n-19e, no report.

TETON—Hawley et al, ne 15-29-1w, spudded. L. B. O'Neil, 16-25-5w, dr 2000 ft. Mitchener et al., Rondas 1, 9-23-1w, dr 500 ft. H. B. Chesser et al, 4-23-8, spudded. Texas Prod. Co., Wolfer 1, 31-26-3w, dr 900 ft. Rocky Mtn. O&G Co., Salmond 1, ne 4-23-8w, dr 250 ft.

TOOLE—Monalta Oil Co., 1Ltd., Buckley 1, se 1-37-4w, dr 2200 ft. Anaconda Pete Co., ne 19-36-2e, dr 1900 ft. Mahan et al, Lee 1, 10-31-1w, try water so at 2265 ft. International Royalty Holding Co., Pederson 1, sw 21-35-1e, stand 1851 ft. International Royalty Holding Co., Henry 1, 26-35-3e, dr 900 ft. Black Gold Pete Co., Toole 1, nw 22-36-1e, dr 500 ft. Roxana Drlg. Co., Toole 1, 22-36-1e, dr 400 ft.

YELLOWSTONE—Montana Corp., 16-4n-26e, dr 950 ft.

EAST TEXAS

BOWIE COUNTY — Hooks O&G Co.'s Rosenberg 1, King sur, TA 3086 ft.

CAMP COUNTY—Rogers et al's Enfelt 1, Montgomery sur, sd 1920 ft.

RED RIVER COUNTY — D. M. Buffington's Hoosier 1, Hughart sur, sd 1863 ft. Shad Harper's Garland 1, Wagley sur, sd 1862 ft. Johnson Pet. Co.'s Randolph 2, Dean sur, sd 1440 ft.

SHELBY COUNTY—Chapparral Oil Co.'s Holt 2, Matthew Moore sur, sd 3004 ft. Gulf Ref. Co.'s Pickering Lbr. Co. 2, Patterson sur, bldg dk. Benedum & Trees' Pickering Lbr. Co. 1, Yordt sur, dr hard chalk 2014 ft.

WEST TEXAS

Completions

UPTON COUNTY—		
Prairie O&G Co., McQuatters 1....	*	4050
WARD COUNTY—		
Penn Oil Co. & Atlantic, J. B. Bennett 1	200	2618

ANDREWS COUNTY—Deep Rock Oil Co. et al's Ogden 1, dr 1305 ft.

BORDEN COUNTY—Louisiana O. & R. Corp.'s Miller 1, elev 2541 ft, top salt 1080 ft, dr 2010 ft. W. A. Moncrief & Humble's Munger 1, elev 2433 ft, top salt 1090 ft, dr 1530 ft. Teas-Wheeler et al's Long 1, elev 2516 ft, top salt 1030 ft, dr 2710 ft.

BREWSTER COUNTY—Ed. W. Bateman & Co.'s Neville 1-A, sd 2200 ft. Brewster Oil Co.'s Fee 1, fsh 1930 ft. E. L. Chapman et al's Skinner 2, co 725 ft. J. P. Johnson & Bert Weekly's Jackson-Harmon 1, elev 3972 ft, sd hfw 3991 ft.

COCHRAN COUNTY — Continental Oil Co.'s Slaughter 1-A, elev 3793 ft, pb from 5000 to 4885 ft and shot 80 qts 4860-85 ft and water broke in. R. A. Westbrook et al's Slaughter 1, dk.

COKE COUNTY — Mid-Kansas O. & G. Co.'s Lackey 1, elev 2152 ft, dr up bailer 4085 ft.

CRANE COUNTY—Gulf's Waddell 8, elev 2724 ft, top salt 1322 ft, top brown lime 3170 ft, showing oil, dr 3550 ft.

CROCKETT COUNTY — California Co.'s Powell 3, elev 2725 ft, top salt 1080 ft, dr 2340 ft. A. R. Epenauer & West Texas Pet. Corp.'s Noelke 1, elev 2545 ft, top salt 720 ft, trace oil 1655 ft, dr 1675 ft. Lewis & Daniels' Pecos River Bed 1, elev 1967 ft, top lime 1002 ft, sd hfw 1326-35 ft. W. A. Moncrief's Todd 1, (Sec. 29) dr 1235 ft. Taylor-Link Oil Co.'s Powell 3, elev 2722 ft, top salt 1040 ft, top lime 2505 ft, testing pay 2637-43 ft.

CULBERSON COUNTY — Grisham-Hunter Corp.'s Fee 1, dr 370 ft. Hickey et al's Finley 1, elev 3916 ft, sd 2275 ft. Scott & Dittman's Miller 1, elev 4059 ft, dr 3280 ft. West Texas Oil & Explo. Co.'s McGregor 1, sd 825 ft.

ECTOR COUNTY—Penn Oil Co., Humble & Atlantic's Kloh 1, elev 2925 ft, top salt 1230 ft, top lime 3410 ft, flowing small heads 32.2 degree gravity oil 3715-25 ft.

EL PASO COUNTY—Inter-Coastal Oil Co. (was Lane-Tex Oil Co.'s) Malone 1, dr 1305 ft.

FISHER COUNTY—Cranfill-Reynolds Co.'s Barrett 1, dr 1170 ft; Texas Cement 1, dr 2170 ft. Landreth Prod. Corp.'s Cooper 2, spudding. Magnolia's Alice Lee 1, elev 1827 ft, dr 3280 ft. Mid-West Explo. Co.'s Steele 1, dr 2705 ft. Mid-Kansas & Phillips Pet. Co.'s Stephenson 1-A, ur 3005 ft. Henry Riley et al's Veatch 1, dr 2915 ft. The Texas Co.'s Stephens 1-B, elev 1965 ft, ur 2995 ft.

GAINES COUNTY—Cranfill-Reynolds Co. & Louisiana O&R Corp.'s Ralph 1, rig.

GARZA COUNTY—H. C. Cate et al's Stoker 1, lcn. Paul Steed et al's Boren 1, elev 2350 ft, top salt 450 ft, top lime 1847 ft, sd 2546 ft. Thompson et al's Tuffing 1, elev 2277 ft, dr 2470 ft.

GLASSCOCK COUNTY—California Co.'s Currie 3, dr 1720 ft; Joens 1, dk. Daniels et al's Meek 1, elev 2792 ft, sd 1008 ft. Fuhrman Pet. Corp.'s McDowell 1, dr 645 ft. Glasscock Bros. et al's Edwards 1, dk. Kirby Pet. Co. et al's Baker 1, co 2090 ft. Landreth & Tidal Oil Co.'s Houston 1, top salt 1168 ft, fsh 1870 ft. Lion O. & R. Co.'s Coffee 2, dr 180 ft. Mid-West Explo. Co.'s Edwards 1, elev 2550 ft, st 3090 ft. Schermerhorn Oil Co.'s Phillips 2, dr 1300 ft. Shell Pet. Corp.'s Kloh 1-B, (Sec. 11) spudding; Coffee 1, dr 1420 ft. E. L. Smith Oil Co.'s Coffee 1, dr 950 ft; Coffee 2, rig. Simms Oil Co.'s Coffee 1, rig. Sun Oil Co.'s Phillips 2, elev 2617 ft, cem 2060 ft; Phillips 3, spudding; Phillips 4, rig.

TOM GREEN COUNTY — Fitzgerald & Smith's Bennett 1, elev 1792 ft, sd 2410 ft.

HOCKLEY COUNTY — World Oil Co.'s Ellwood 1, elev 3363 ft, top salt 2157 ft, set cas 3224 ft.

HOWARD COUNTY—Merriwether Oil Co.'s Eva Smith 1, co 1020 ft.

HUDSPETH COUNTY — California Co.'s University 1, elev 5833 ft, dr 2285 ft. Geo. E. Richardson et al's Thaxton 1, spudded and sd.

IRION COUNTY—Banner Oil Co.'s Nutt 2, lcn. J. B. Crawford et al's Nutt 1, ur 1085 ft. Brown & Fox's Tankersley 2, lcn. Carl G. Cromwell et al's Nutt 1, testing oil pay 1397-1410 ft, salt water 1418-20 ft, oil pay 1455-80 ft. Fox & Miller's Tankersley 1, dr 1310 ft. Fuhrman Pet. Corp.'s Nutt 1, trace oil 1369-70 ft, ur with water at 1440 ft. Kingwood Oil Co.'s J. D. Sugg 1, elev 2334 ft. Simms Oil Co.'s Carter 1, dr 780 ft. J. A. Starkweather et al's Lindley 1, dr 275 ft. P. H. Williams et al's Ashe 1, dr 3605 ft.

JONES COUNTY — Adsit et al's Swenson 1-A, ur 1765 ft. Mid-Texas O&G Co.'s King 1, sd 1280 ft. Sedgwick O&G Co.'s Morrison 1, set cas 2340 ft. F. E. Shaheen et al's King 1, sd 1560 ft.

KENT COUNTY—Geo. W. White & R. E. Smith's Pursley 1, sd 250 ft.

LOVING COUNTY — Humble O&R Co.'s Kloh 1, co 1125 ft. Independent O&G Co.'s Wheat 1, dk. Lockhart & Co.'s Allen 3, dk; Hazell 1, elev 2705 ft, dr 4035 ft; Hubbard 3, elev 2691 ft, top salt 775 ft, dr 2215 ft; Hubbard 4, elev 2694 ft, top salt 710 ft, dr 2310 ft.

LYNN COUNTY—Hart Oil Corp. & Geo. McCamey's Edwards 1, elev 3128 ft, top salt 2140 ft, dr 4780 ft.

MENARD COUNTY—Barnett et al's Callan 2, sd 740 ft.

MITCHELL COUNTY — Gibson & Johnson's Scott 1 and 2, lcns; Scott 3, dr 300 ft. Teas-Wheeler et al's Radford 1, elev 2223 ft, top salt 667 ft, top lime 1365 ft, dr 4315 ft.

NOLAN COUNTY—Gibson & Johnson's S. F. Bond 1, elev 2126 ft, dr 825 ft. Phillips Pet. Co.'s Plunkett 1, elev 2423 ft, dr 4175 ft.

PECOS COUNTY — California Co.'s University-Landrum 1, elev 2555 ft, top salt 794 ft, 8 million feet gas and spraying 10 bbls oil daily 1625-50 ft. Condor Oil Co.'s Wangerin 1, machine. Continental Oil Co.'s University 2-A, 4-A and 5-A, machines; University 3-A and 6-A, lcns. Cosby Prod. & Roy. Co.'s Ft. Stockton 1, set cas 760 ft. Corzelius Bros. et al's Cordova 1, lcn. Cosden Oil Co.'s McDonald 1, machnie. Dittman Drlg. Co. et al's Cunningham 1, lcn. Dixie Oil Co.'s McKenzie 1, lcn. Cowboy Evans et al's Pecos Valley 1, elev 2445 ft, top salt 1215 ft, ran tubnig to test oil 1556-91 ft. Gibson & Johnson's Grace 1-A, elev 2866 ft, dr 1275 ft. Gulf Prod. Co.'s University-Hale 1-A, elev 2478 ft, top salt 775 ft, dr 1425 ft. Henshaw Oil Corp. (Angelo Pet. Inc.'s) McDonald 1, top salt 690 ft, dr 1180 ft; University 1, dr 790 ft. Independent O&G Co. & Rowan-Tong's McDonald 2, dr 670 ft; McDonald 3, top salt 715 ft, dr 1430 ft. Jayhawk Pet. Co.'s Price 1, dr 565 ft. J. L. Kennedy et al's M. R. Kennedy 1, dr 600 ft. Landreth Prod. Corp.'s Cunningham 1, lcn; McDonald 1-A, dr 1500 ft; McDonald 2-A, dr 255 ft; University 2-A, dr 990 ft; University 3-A, dr 235 ft; University 1-C, fsh 180 ft; University 2-C, dr 925 ft; University 1-D, dr 635 ft; University 2-D and 3-D, machines; University 1-E and 2-E, machines. Landreth et al's Ely Smithpeter 1, machine. Landreth & Angelo Pet. Inc.'s University 1-G,

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Arrive Laredo	1:15 P. M. Monday	Leave San Luis Potosi	8:15 P. M. Sunday
Leave Laredo	4:30 P. M. Monday	Arrive Monterrey	7:25 A. M. Monday
Arrive Monterrey	3:35 A. M. Tuesday	Leave Monterrey	7:45 A. M. Monday
Leave Monterrey	7:50 A. M. Tuesday	Arrive Laredo	3:00 P. M. Monday
Arrive San Luis Potosi	6:45 P. M. Tuesday	Leave Laredo	5:00 P. M. Monday
Leave San Luis Potosi	7:15 P. M. Tuesday	Arrive Corpus Christi	11:00 P. M. Monday
Arrive Mexico City	7:45 A. M. Wednesday	Arrive Houston	7:45 A. M. Tuesday

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spudding; University 2-G, spudding; University 3-G, machine. Landreth & Dunning's McDonald 1-B, machine. Landreth & World Oil Co.'s University 2-B, elev 2547 ft, top salt 710 ft dr 1335 ft; University 3-B, elev 2532 ft, cem cas 875 ft; University 4-B, elev 2551 ft, dr 495 ft; University 5-B, elev 2536 ft, dr 320 ft. Mazda Oil Corp.'s Cordova 1, lcn. Merrick & Bristow's Neville 1, set 12½ cas 270 ft. Milham Corp.'s McDonald 1, dr 640 ft. W. A. Moncrief's University 1, (Sec. 27), elev 2694 ft, top salt 1090 ft, top lime 1775 ft, dr hfw 2075 ft; Clarkson 1, (Sec. 84), dr 785 ft. R. E. Moore et al's Arnold 1, sd 1218 ft. Geo. B. Morgan et al's Tippett 1, spudded and sd; Toberg 2, dr 550 ft. J. D. O'Mara et al's Bennett 1, fsh 875 ft; Streety 1, sd 825 ft. S. B. Owens, Inc. & Cranfill-Reynolds Co.'s Masterson 1, dr 275 ft. Pecos Crude Oil Pur. Co.'s Pecos Valley 3, elev 2449 ft, top salt 1115 ft, fsh after shot, td 1952 ft. O. J. Perron et al's L. Peterson 1, elev 2439 ft, top salt 990 ft, sd hfw 2300 ft. Phillips Pet. Co.'s Courtney-Pryor 1, elev 2951 ft, dr 4175 ft; Courtney-Pryor 2, dr 575 ft. Hector Oil Co.'s State 1, machine. Red Bank Oil Co.'s Neville 1, dr 550 ft. M. M. Rowan et al's Sherbino 1, elev 2884 ft, top salt 975 ft, top lime 2132 ft, making sulphur water 2230 ft; University 1, (Sec. 25), elev 2764 ft, top salt 820 ft, top lime 1785 ft, sd for packer with sulphur water 1987 ft. Schumaker et al's Williams 1, elev 2980 ft, sd 1665 ft. Shell Pet. Corp.'s University 1, top salt 853 ft, set 10-inch cas 876 ft; University 3-C, dr 260 ft; University 4-C, dr 500 ft. B. J. Spikes et al's Brown 1, elev 2387 ft, sd hfw 2359 ft. Sides & Cloyd's Blackstone-Slaughter 1, machine. Sun Oil Co.'s University 2, elev 2624 ft, top salt 860 ft, top lime 1530 ft, sd permit expired, td 1715 ft; University-Carlson 1, elev 2686 ft, top salt 1070 ft, dr 1560 ft; University-Teler 1, elev 2625 ft, top salt 900 ft, dr 1100 ft. Taylor-Link Oil Co.'s University 4, elev 2529 ft, top salt 850 ft, dr 1520 ft; University 5, dr 430 ft; University 6, swedg cas 270 ft; University 7, spudding; University 8 and 9, machhines. The Texas Co.'s McDonald 1, elev 2466 ft, dr 1035 ft; McDonald 2, spudding. Texas Co. & Phillips Pet. Co.'s Campbell 1, elev 2441 ft, top salt 1010 ft, dr 2301 ft. Tidal O.l Co.'s McDonald 1, elev 2479 ft, top salt 705 ft, dr 1585 ft; McDonald 2, dr 1420 ft. Tower-McKanna, Inc.'s University 1, (Sec. 14) elev 2715 ft, top salt 820 ft, top lime 1650 ft, sulphur water 1830 ft, dr 2005 ft. Transcontinental Oil Co.'s University 1, elev 2552 ft, sd 4554 ft. Trees Oil Co.'s J. C. Trees 2, elev 2476 ft, ur 1726 ft; Trees 3, lcn. R. D. Webb et al's Fee 2, dr 925 ft. World Oil Co.'s University 1, (Sec. 31), elev 2508 ft, top salt 850 ft, dr with 1000 ft oil in hole 1596 ft. F. P. Zoch & Eastland Oil Co.'s Cordova 1, rig.

PRESIDIO COUNTY—TP Coal & Oil Co.'s Bogel 1, dr 2005 ft.

REAGAN COUNTY—Big Lake Oil Co.'s University 131, dr sandy-shale 8366 ft; University 151, dr shale and lime 7600 ft; University 1-C, dr 6335 ft; University 2-C, dr 6040 ft. Henshaw-Thomas & Brann's Hughes 1, lcn. Skelly Oil Co. et al's University 4, 2880 ft, top salt 1300 ft, dr 2720 ft.

REEVES COUNTY—Hansford et al's Williams 1, spudded and sd. Slack & Fink's Brooks-Huling 1, sd 500 ft. Southern Crude Oil Pur. Co.'s Kloh 1-A, elev 2784 ft, top salt 2000 ft, dr 4035 ft. D. R. Thompson et al's Eddins 1, fsh 5658 ft. Lee O. White et al's Mrs. Hersheusen 1, elev 3244 ft, top salt 2670 ft, sd 3248 ft.

RUNNELS COUNTY—Gibson & Johnson's L. P. Wood 1, sd 490 ft.

SCHLEICHER COUNTY — J. F. O'Harrow's Fee 1, sd 950 ft. McKavit Oil Co.'s Tisdale 1, sd 3500 ft. Phillips Pet. Co.'s J. A. Whitten 1, elev 2333 ft, re-cem 6-inch cas 5027 ft, td 5355 ft. Geo. T. Wilson et al's Page 1, rig.

SCURRY COUNTY — J. G. Armand & Camp Springs O&R Co.'s Quinn 1-A, dr 1170 ft. Byrd & Harmen's Murphy 1, sd 530 ft. Cottingham & Briscoe's Truss 1, elev 2664 ft, top salt 1050 ft, top lime 2175 ft, sd 2205 ft. R. B. Pender et al's Davis 1, elev 2208 ft, top salt 445 ft, set cas 3805 ft. Texas-Canadian Oil Co.'s Mooar 1, lcn.

STERLING COUNTY—S. B. Owens, Inc.'s Tweedle 1, lcn.

SUTTON COUNTY—Independent O. & G. Co.'s Wilson 1, lcn. Independent & Sun Oil Co.'s Allison 1, dr 705 ft. Phillips Pet. Co.'s Holman 1, elev 2277 ft, top lime 2317 ft, dr by 4 strings tools, td 6633 ft. L. G. Priest et al's Allison 1, elev 2238 ft, bailing oil and some water, dr 3957 ft.

TAYLOR COUNTY — Condor Pet. Co.'s Brookerson 1, fsh 2380 ft. Dunnigan Bros. & 1867 ft, flowing high gravity oil by heads at 2387-89 ft. J. B. Jameson et al's Webb 1, elev 1905 ft, changing contractors, td 4958 ft.

TERRELL COUNTY—Big Bend Oil Corp.'s Bassett 1, elev 2396 ft, sd for rotary, td 1150 ft. Keck-Pecos Oil Trust's Hamilton 1, elev 1733 ft, co 2750 ft. Mrs. J. B. McPhee et al's Sam Belt 1, pul cas 880 ft. Milham Corp.'s Bassett 1, elev 2270 ft, fsh cas 5490 ft.

VAL VERDE COUNTY — Dyar Bros. et al's Wilson 1, elev 2115 ft, cem crevice 3594 ft. Phantom Oil Co.'s J. F. Ingram 1, spudded and sd.

WARD COUNTY—Alpine Oil & Dev. Co.'s Boogher (Townsite) 1, elev 2443 ft, top salt 760 ft, testnig 800 ft, oil in hole (35.7 degree gravity) at 2133-40 ft. Atlantic & Delmar's Hayzlett 4 and 5, machines. Continental Oil Co.'s Sealy 1-A, elev 2611 ft, top salt 1088 ft, top lime 2080 ft, pb from hfw 3358 to 3250 ft, shot in oil pay 3210-15 ft. C. C. Dorr et al's Costley 1, fsh cas 145 ft. Cranfill-Reynolds Co.'s Williams-Robeson 1, elev 2515 ft, top salt 755 ft, dr 2205 ft. Gulf's Hutchings 2, elev 2655 ft, top salt 1240 ft, top lime 2250 ft, pb from water at 3274 to 3190 ft for shot; O'Brien 6, elev 2659 ft, top salt 1068 ft, top lime 2304 ft, coring lime 3017 ft; Wristen 3, elev 2511 ft, top salt 748 ft, dr 2475 ft. L. C. Harrison Oil Co.'s Wristen 1, spudded and sd. J. H. L. Oil Co.'s Hayzlett 3, rig. Penn Oil Co. & Atlantic's Bennett 1, comp. flowing 200 bbls oil daily after shot, td 2618 ft. Shell Pet. Corp.'s Sloan-Owen 1, top salt 765 ft, dr 1755 ft. Shipley Oil Corp.'s Monroe 1, dr 535 ft; Hayzlett 3, dr 140 ft; Hayzlett 4, machine. Tex-O Oil Prod. Co.'s Redman 1-A, hfw 930-40 ft, dr 955 ft.

WINKLER COUNTY—V. T. Bolin & Co. et al's Brown 2, top lime 2440 ft, coring oil saturated broken formation 2820-25 ft. Liner Drlg. Co. et al's Campbell 1, elev 2884 ft, top salt 1155 ft, fsh 2350 ft.

SOUTH LOUISIANA

ACADIA PARISH—Yount-Lee Oil Co.'s Houssiere-Latrielle 7, Jennings, dr 6675 ft, sand. Crowley Oil & Mineral Co. 4, Jennings, dr 7915 ft, shale; Simms Fee 1, Jennings, lcn.

ASCENSION PARISH—Gulf's United Lands Co.'s 6, Sorrento, lcn. Triumph Oil Co.'s J. D. Lacey 2, 3 mi se Sorrento, sd 3327 ft.

CALCASIEU PARISH—J. O. Davis' Mimms 1, Lake Charles, sd 5600 ft. Shell's Miller 1, Lockport, abn, 7200 ft. Wilfred Lahay's James 2, 3½ mi s Starks dome, sd 3400 ft.

CAMERON PARISH—The Texas Co.'s Calcasieu Lake A-4, S. Calcasieu Lake dome, will sdtr at 3535 ft. Pure's Yount-Lee 7, Sweet Lake, fsh 6380 ft. Shell's Watkins 6, Black Bayou, repairing rig; Watkins 12, Black Bayou, dr 4800 ft, sand; Watkins 13, dr 1000 ft, gbo; A. Marceaux 1, Mallard Bay, 800 ft, sand. Yount-Lee Oil Co.'s W. H. Stark 1, Johnson Bayou, dr 3465 ft.

IBERIA PARISH—The Texas Co.'s Vermilion Bay A-4, dr 100 ft. Jefferson Lake Oil Co.'s Lake Peigneur 3, lcn.

IBERVILLE PARISH—Shell's Wilbert 3, White Castle, sdtr 5660 ft. Standard's Schwing 2, Bayou Blue, dr 3590 ft, sand; Schwing 3, Bayou Blue, capped piling.

JEFFERSON DAVIS PARISH—Vacuum's DeVilbiss 2, Roanoke, dr 5390 ft, gbo. J. E. Carradine's Walshe 4, Welch, dr 1260 ft. Texas Gulf Sulphur Co.'s Stark 14-A, Thibodaux, dr 1275 ft; Stark 24, Thibodaux, dr 1720 ft, cap rock.

PLAQUEMINES PARISH—Gulf's Morris & Rose 1, Spanish Pass, dk. The Texas Co.'s Garden Island Bay 3, bldg dk foundation. Humble's Cockrell-Moran 1, Lake Grande Ecaille dome, lcn; Lake Washington 1, Lake Grande Ecaille, dr 3360 ft, shale and gbo.

ST. LANDRY PARISH—Gulf's Gaudet 2, Port Barre, dr 900 ft.

ST. MARTIN PARISH—Ohio Oil Co.'s Martin et al 4, Hager dome, lcn. The Texas Co.'s St. Martin Land Co.'s Fee 1, Hager dome, dr 4878 ft. St. Martin Land Co.'s Fee 2, Hager dome, dr 3100 ft, sand.

TANGIPAHCA PARISH—Joan Dev. Co.'s Lake Superior Piling Co. 1, sd 3095 ft. Completion Oil Co.'s Kent 1, 36-1s-6e, sd 2710 ft.

TERREBONNE PARISH—The Texas Co.'s Pelto B-2, lcn; Lake Pelto B-3, driving piling; Four Isle Bayou 2, dr 2377 ft, gbo; Bay Junop 1, dr 3925 ft, gbo; Bay St. Elaine 2, standing as gas well; No. 3, ru; Lake Barre 3, lcn; Caillou Island 2, driving piling; La. Land & Explo. Co.'s B-1, dr 1570 ft, cap rock; B-2, bldg dk foundation.

TEXAS GULF COAST

Completions

COLORADO COUNTY—
Coyle-Concord Oil Co., Root 1.... * 1510

FORT BEND COUNTY—
Grayburg Oil Co., Ransom 1, s Richmond ..... * 4333

AUSTIN COUNTY—O'Hara et al's Ward 1, wo, ½ mi w Peters, sd 3400 ft. Whittington et al's Lass 1, 4 mi nw Bellville, dr 2507 ft, shale.

BRAZORIA COUNTY—Thos. Faust et al's Fee 6, 2 mi s Nash Dome, dr, 1775 ft, sand. Steele & Strickland's Lochridge 1, near Lochridge, dk. Shell's Blakely 1, 2 mi ne Danbury, dk.

CHAMBERS COUNTY—Pure Oil Co.'s Lost Lake 3, dr 2130 ft gbo; Mayes 1, Lost Lake, dr 2736 ft, sand and shale; Mayes 4, dr 680 ft, sand; Mayes 5, dr 44 ft, clay; Mayes 6, ru; Mayes 7, moving in rig; Mayes 8, waiting on rig. Chicago Oil Corp.'s Lawrence 1, 10 mi s Barbers Hill, sd 1185 ft.

COLORADO COUNTY—Morrett et al's Zverck 1, 2½ mi e Ellinger, sd 1000 ft. Coyle-Concord Oil Co.'s Root 1, abn 1510 ft. Rich Oil Corp.'s Von Rosenberg 2, 2½ mi w Alleyton, sd 2825 ft. Humble's Brandon 2, Cat Springs, dr 765 ft, shale.

FAYETTE COUNTY—Kelley et al's Burke 1, 2 mi nw Flatonia, sd 500 ft.

FORT BEND COUNTY—Gulf's Trone 12, Long Point, fsh 5145 ft; Moore 19, Moore's Field, dr shale 5770 ft. Grayburg Oil Co.'s Ransom 1, s Richmond, abn 4335 ft, water sand.

HARRIS COUNTY—Humble's Simms-Smith 75, Goose Creek, abn, 6277 ft; Simms-Smith 76, Goose Creek, lcn; Siadous 1, Mykawa, dr 1975 ft; Woodburn 2, 2 mi s Genoa, dk; Warren 6, Hockley, dr 3983 ft. Hammond et al's Brodt 1, s Sheeks, set cas at 360 ft. York & Robertson's Garrett 1, 5 mi se Fauna, sd 1860 ft. Mrs. J. C. Baldwin's Kitzman 1, 2 mi n Cypress, pulling screen, 4050 ft. Rich et al's Highland Farms 1, Elena, dk.

JEFFERSON COUNTY—River Oil Co.'s Ship Channel Land Co.'s 1, 2 mi se Beaumont, sdtr 750 ft. Deep Test Oil Corp.'s McFaddin 1, e Spindle Top, sd 4300 ft. Gulf's Burrell 3, Fannett, dr sand and shale, 5490 ft; Junker 1, Fannett, dr 3820 ft; Thomas 12, Fannett, dr 4375 ft. Vacuum Oil Co.'s Broussard & Hebert 1, 9 mi se Fannett, dr 5050 ft, water sand. Shell's Heisig 1, 2 mi n Hamshire, dr 7115 ft, sand. The Texas Co.-Houston Oil Co.'s Fitzhugh 1, Big Hill, dr 250 ft. The Texas Co.'s Pipkin 2, Big Hill, dr 4675 ft, sticky shale; Burrell 1, Fannett, dr 4665 ft, shale and lime.

LIBERTY COUNTY—Humble's Sterling 6, Moss Bluff, dr 3125 ft, gbo. Gray-Tex Oil Co.'s Gardner 1, 20 mi n Liberty, dr 1055 ft, gbo. Pure's Liberty Investment Co. 1, Moss Bluff, dr 5612 ft, gbo. Gulf's Weiser 1, Hankamer, dr 2690 ft. Cranfill-Reynolds Company's Esperson 3-A, Esperson dome, dr sand and shale, 3210 ft Vadjak 1, Esperson dome, dr 3770 ft, water sand.

MONTGOMERY COUNTY — Kelly-Baker's Juergus 1, Conroe, dr 2980 ft, gbo.

ORANGE COUNTY—The Texas Co.'s M. H. Stark 1, Pt. Neches, completed at 3175 ft for 1680 barrels; Polk 1, Pt. Neches, dr 700 ft. Gulf's J. H. Starks 1, Pt. Neches, dr 2100 ft; M. H. Starks 1, Pt. Neches, lcn. Calperin et al's Mansfield 1, 1½ mi ne Mansfield ferry, ru.

VICTORIA COUNTY—Humble's Welder 1, 3 mi se Nursery, dr 5230 ft.

WASHINGTON COUNTY—Fuchs et al's Kirk 1, 14 mi sw Brenham, lcn. Brains et al's L. S. Smith 1, 4½ mi ne Gay Hill, dr 1400 ft, shale. Owens et al's Weiss 1, 3 mi sw Brenham, dr 2300 ft, shale. W. Gahee's Davis 1, sd 50 ft. Washington County Oil Co.'s F. C. Schwartz 1, lcn. A. W. Kollett's Harmel 1 n Brenham, dr 50 ft.

WHARTON COUNTY—Hearte Oil Co.'s Brown 1, 5 mi s El Campo, sd 2810 ft.

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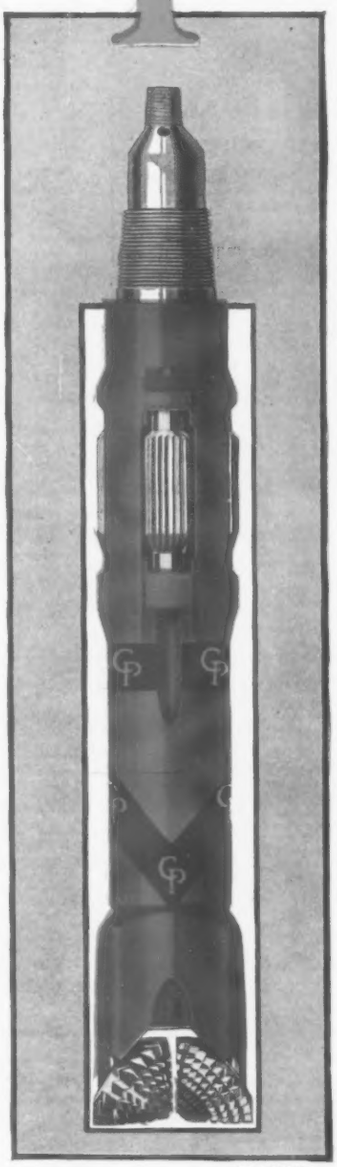

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Patents Obtained, Trade Marks, Patent Causes

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Formerly Assistant Examiner United States Patent Office
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12th Floor Union N. Bk., Houston, Texas

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Bankers Mortgage Building, Houston, Texas

Specializing in Oil Law and Land Law

JOHN F. WEINZIERL

CONSULTING GEOLOGIST

ADVISOR ON GEOPHYSICAL INSTRUMENTS

619 Petroleum Bldg., Houston, Texas

Extraction Plant to Be Built in Louisiana

Shreveport.—Ground has been broken for and construction is ready to begin near Mangham, Richland Parish, on an extraction plant of the Century Carbon Company, which will cost approximately $500,000. The site is immediately north of a similar plant of the International Gas Products, Inc., now nearing completion.

Richland Operating Company will furnish gas for the Century plant which will utilize over 20 million cubic feet daily. The new project is expected to be completed within 90 days.

Standard of California Buys Gas Company

Los Angeles. — Standard Oil Company of California has purchased control of Pacific Public Service Company, of which Coast Counties Gas and Electric Company is a subsidiary, and a distributor of manufactured gas.

The Standard Oil Company of California owns in fee approximately 50 per cent of Kettleman Hills, where during the past year development has indicated an enormous potential natural gas production in addition to crude oil. This holding, together with other of its gas bearing lands, will enable the company to provide natural gas not only to its present customers, but to the rapidly growing industrial development in the area served by the Coast Counties Gas and Electric Company.

This purchase is significant also in that it is developing additional outlets for natural gas at a time when the new California gas conservation bill, which prohibits the waste of natural gas, becomes effective.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of The OIL WEEKLY, published weekly at Houston, Texas, for October 1, 1929.

State of Texas,
County of Harris, ss.

Before me, a Notary Public in and for the State and County aforesaid, personally appeared A. L. Burns, who, having been duly sworn according to law, deposes and says that he is the General Manager of the The Oil Weekly, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—R. L. Dudley, 3238 Huntington Drive, Houston, Texas.

Editor—Spencer W. Robinson, 4915 Louisiana St., Houston, Texas.

Managing Editor—J. Kent Ridley, 4401 Greely, Houston, Texas.

General Manager—A. L. Burns, 4311 San Jacinto, Houston, Texas.

2. That is owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given).

The Gulf Publishing Company, Houston, Texas; James Anderson, Houston, Texas; R. L. Blaffer, Houston, Texas; Mrs. Sarah Campbell Blaffer, Houston, Texas; A. L. Burns, Houston, Texas; J. F. Carter, Jr., Tulsa, Okla.; Dr. N. L. Dudley, Goose Creek, Texas; R. L. Dudley, Houston, Texas; W. S. Farish, Houston, Texas; Wm. V. Gross, Houston, Texas; Howard W. Hughes, Houston, Texas; Chas. H. Lane, Houston, Texas; J. H. McEvoy, Houston, Texas; Wallace E. Pratt, Houston, Texas; J. Kent Ridley, Houston, Texas; S. W. Robinson, Houston, Texas; R. S. Sterling, Houston, Texas; O. R. Waller, Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:

Houston National Bank, Houston, Texas.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

A. L. BURNS,
General Manager.

Sworn to and subscribed before me this 25th day of September, 1929.

(Seal) J. KENT RIDLEY.

(My commission expires June 1, 1931).

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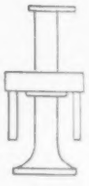

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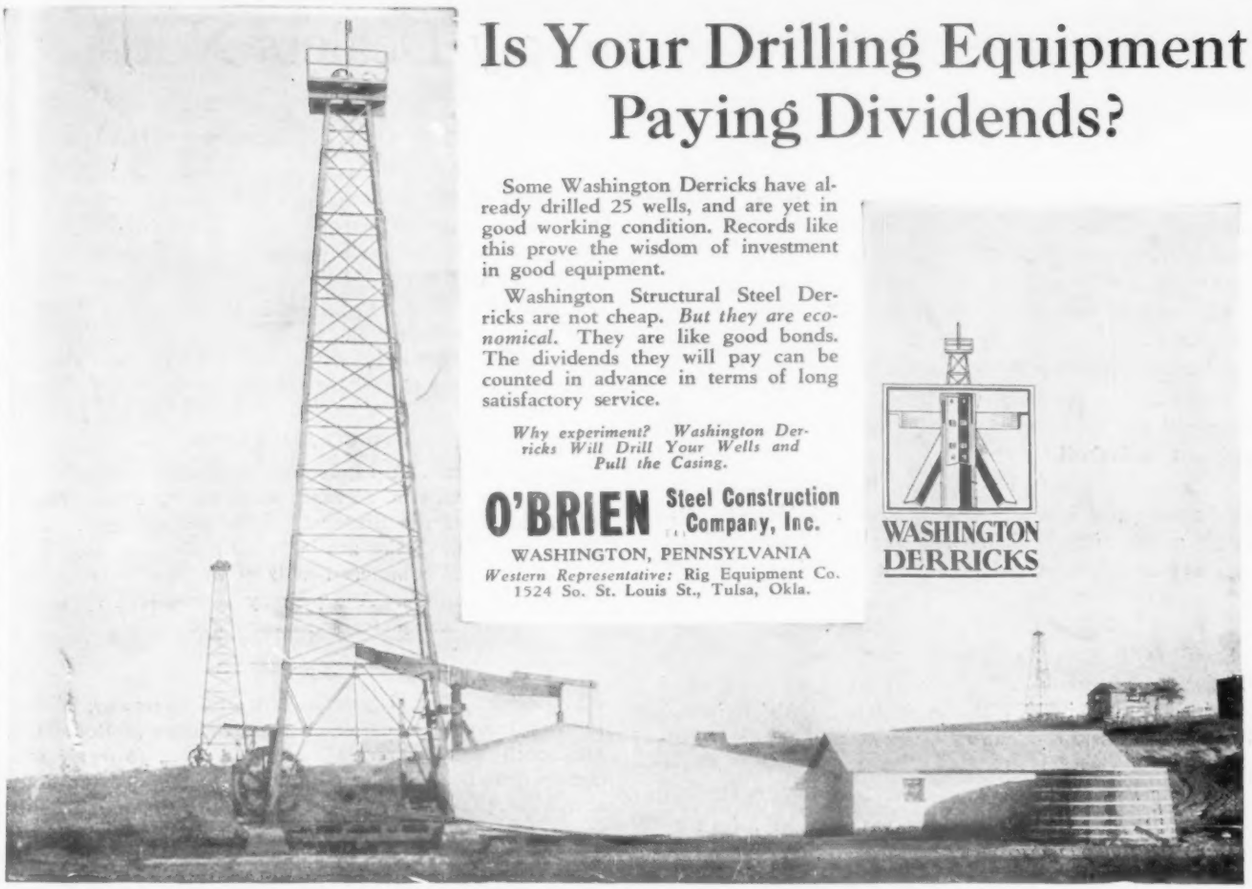

Some Washington Derricks have already drilled 25 wells, and are yet in good working condition. Records like this prove the wisdom of investment in good equipment.

Washington Structural Steel Derricks are not cheap. *But they are economical.* They are like good bonds. The dividends they will pay can be counted in advance in terms of long satisfactory service.

Why experiment? Washington Derricks Will Drill Your Wells and Pull the Casing.

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Stacy Swivel Load Binders

No Load Too Big—None Too Heavy For This Handy, Time-Saving Tool

Stacy Swivel Load Binders make hauling safe and save time and work. They bind any load quickly, securely, easily.
Made in 5 sizes, weighing from 2 lbs. to 14 lbs. for each single tool, not for a pair as commonly quoted, sold and used.

Every Oil Field in the World Uses Stacy Binders

Just ask your jobber or export agent for Stacy Load Binders in the size you want. He'll do the rest.

I also sell chains. Any weight, size or length with hooks or as desired.

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Manufacturers and Supply Dealers Notes

AXELSON PERSONNEL CHANGES

Wm. H. Jackson, purchasing agent for the Axelson Machine Company, and connected with that organization for the past 19 years, has been made special supervisor of the Axelson Aircraft Engine Company and director of purchases for both concerns.

Raymond E. Imhoff, assistant purchasing agent for the Axelson Machine Company for the past six years, becomes purchasing agent for this company.

Leslie Salow, formerly with the Gallagher Tank Company and the Western Pipe and Steel Company, becomes assistant to Imhoff.

The creation and maintenance of the office of assistant purchasing agent is in line with the Axelson Machine Company's policy of maintaining audience facilities available at all times to salesmen and other representatives who call.

NEW CORPORATE NAME

Pacific Oil Tool Company, Ltd., is the new name of the reorganized Pacific Oil Tool Company, which was incorporated in 1921 at Los Angeles. Officials include Walter T. Wells, president and manager; Judge Lee Champion, vice-president; H. E. Hoffer, secretray and treasurer; Otto G. Keil, sales manager and W. G. Lane, director.

Mr. Wells for a number of years was Western sales manager of the Union Metal Manufacturing Company of Canton, Ohio. Judge Champion has been interested for years in various oil development enterprises in the West, and is a retired attorney. Mr. Hoffer for several years was assistant manager of the Wilson and Williard Company. Mr. Keil has had a wide experience in California as well as Mid-Continent fields in sales. Mr. Lane for some years handled oil field sales for the General Electric Company in California.

The company is manufacturing and selling a rather extensive line of oil field tools.

BARBERS HILL STORE

Wilson Supply Company has opened a store in the Barbers Hill field, with Don McCloud, formerly at Hull, in charge.

Stockham Pipe & Fittings Company, Birmingham, Alabama, is now carrying an extensive line of fittings for both the producing and refining branches of the industry in its new Houston branch store. H. S. Williams, formerly purchasing agent for Sinclair Oil & Gas Company's Gulf Coast headquarters, Houston, is manager of this branch, which is located at 2311 Polk Avenue. As in its home office and branches at Los Angeles, Boston, New York, Philadelphia, Chicago and Detroit, the Houston store is selling through the jobbers.

NEW PRODUCT

Haynes Stellite Company, 30 East Forty-Second Street, New York City, plans to shortly start marketing a new tool of the tungsten-carbide type under the name of Haystellite. This alloy was introduced a short time ago for use as a diamond substitute on bits and for drawing dies, and a modification of the original alloy has been found as a valuable cutting metal. Haystellite is described by its manufacturers as a cast alloy, made by a special process. While these cutting tools are yet in the process of development, the Haynes Stellite Company expects to be able to furnish samples in the near future.

HIBBARD S. GREENE GETS APPOINTMENT

Hibbard S. Greene, former vice president and director of the Barber-Greene Company, Aurora, Illinois, has recently been appointed assistant to the president of Chain Belt Company. He will co-ordinate the marketing plans of this company, Sivyer Steel Casting Company, Federal Malleable Company and the Interstate Drop Forge Company, all of Milwaukee, Wisconsin, and the Stearns Conveyor Company, of Cleveland. The latter company is a division of Chain Belt Company, and the same financial interests control the four companies.

EMSCO BULLETIN

Emsco Derrick & Equipment Company is mailing out copies of its bulletin, Advance Engineering Folder No. 74, which describes the Emsco type "E" reverse gear. Three drawings showing the assembly with detailed description are carried, and complete details of the new gear are covered in the bulletin. A copy may be obtained by writing the company headquarters in Los Angeles.

Marion Machine, Foundry & Supply Company, Marion, Indiana, has opened up an office in Chicago in Room 1022, 330 South Wells Street. J. Mack Wilson, formerly sales manager, home division, is in charge of the Chicago office, and will sell the Marion line of boiler room specialties, metal buildings, clay working machinery, wood-working machinery and oil well equipment.

The Broderick & Bascom Rope Company has recently announced the removal of its general office to 4201 North Union Boulevard, St. Louis, Missouri. The move was effective September 23.

WIRE CLOTH BULLETIN

A four-page bulletin entitled, "Wire Cloth—All Meshes—All Weaves—All Lengths—All Widths—All Metals" has just been published by the Newark Wire Cloth Company, 351-365 Verona Avenue, Newark, New Jersey. The bulletin shows a number of typical examples of wire cloth varying from one inch space to 300 mesh. It gives the latest information on gasketed metallic filter cloth, on the new Newark testing sieve, with inside rounded corners and all soldering on outside, on Newark foundry riddles, the Newark renewable bottom sieve and Newark metallic filter cloth. On request a free copy will be sent to any reader who mentions this publication.

PIPE BULLETIN

A bulletin just off the press is devoted to description of Naylor line pipe, a product of the Naylor Pipe Company, Chicago. This bulletin, No. 29-2, features the light weight of Naylor line pipe through photographic illustrations of two men carrying 40 feet of six-inch pipe on their shoulders on a Seminole, Oklahoma, field job. Another photograph shows three men carrying three 30-foot lengths of six-inch pipe, which is being laid for an oil trunk line at Kinta, Oklahoma. Another illustration of the light weight of this pipe is given in a photograph taken at Tulsa of a one and one-half ton truck hauling nine 40-foot lengths of 16-inch line pipe. All illustrations used in this 26-page treatise of Naylor line pipe are photographs of scenes in the field. A copy of this bulletin is available by writing the main office and plant, 1230 East 92nd Street, Chicago.

THE NEW KUEHNE

Eliminates Foot Valve Troubles

No gaskets are used—no joints to rust out, blow out or break out, therefore will not leak. Full-opening waterway with area larger than the pipe, resulting in very little friction. One piece valve body making it possible to use the valve without strainer when necessary. No lugs to hang up in well or sump. Fool-proof, trouble-proof and leak proof—100% superior to the old type.

Ask your Supply Dealer for Kuehne Hinge-Type, Full-Opening Foot Valve, or write us for descriptive matter and name of nearest dealer.

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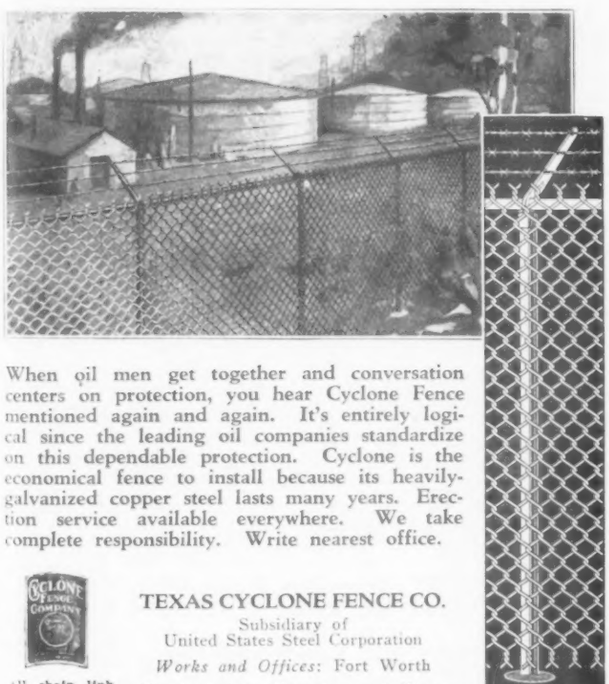

When oil men get together and conversation centers on protection, you hear Cyclone Fence mentioned again and again. It's entirely logical since the leading oil companies standardize on this dependable protection. Cyclone is the economical fence to install because its heavily-galvanized copper steel lasts many years. Erection service available everywhere. We take complete responsibility. Write nearest office.

All chain link fence is not Cyclone. This name plate identifies the genuine Cyclone Fence.

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Also Sales Offices: New Orleans, Shreveport

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Cyclone Chain Link Fence is furnished with H - Column Posts — proved by tests the strongest fence posts made. Set in new reinforced concrete foundations.

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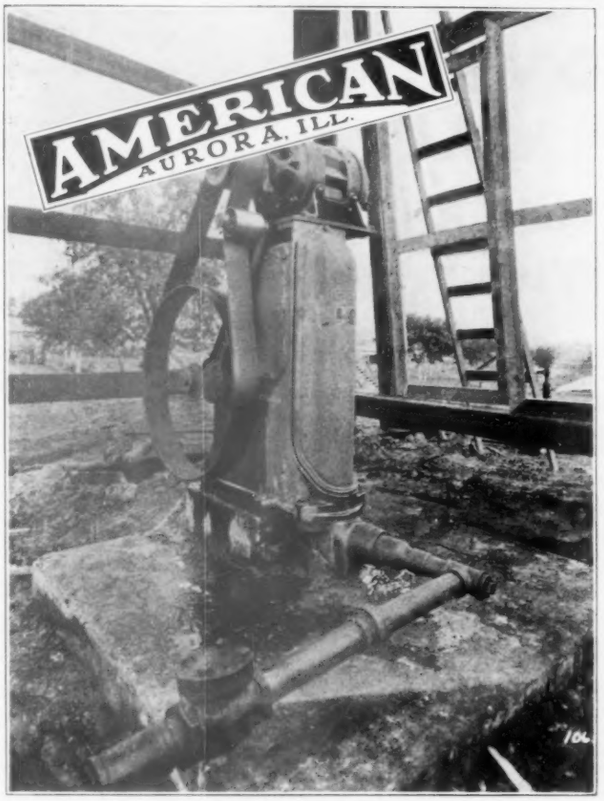

"American" Enclosed Power Heads *for Water Wells*

Illustrated above is an "American" totally enclosed power head for water service in connection with the oil wells of the Amerada Petroleum Corporation in the Seminole field. They are built for hard service, pipe line stations, tank farms, gasoline plants and refineries. They are made in various sizes to meet any usual well conditions.

These heads are designed for either motor or engine drive. The heads are totally enclosed and all moving parts are automatically oiled. They are sturdy machines that require the least possible attention. The removal of the cover permits ready access to the working parts, and permits rods to be pulled without disturbing pipe connections.

Complete catalogs and engineering information available upon request

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Without a Leak
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Water Pressure finds the weakest spot. Be safe from shoe leaks and channeling, Konset your cement. Get more oil, less treating. Waterproofs, accelerates, bonds and hardens.

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Patent Pending

Liquid Paste or Powder. Wall Sealer and Mud Lubricator.

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Expands and Congeals. Recovers Lost Circulation. Prevents Caving and Shale Heaving. Preparations for Water Shut-Off and Reconditioning Wells.

HEF-T
The Improved Mud Heavier. Will control any gas pressure. Walls up hole in any formation. The Heaviest Compound *and then some.* Hef-T combines in one product what competitors claim for two. Save the price of one.

KLEEN-A-WELL
Patented

Cleans Tubing and Rods. Removes Paraffine, Asphaltum, Gypsum or Salt. Increases Production.

SULCO
BOTTOM HOLE COMPOUND

A Special Waterproof Bonding Formula. For Bottom Hole Cementing, Leaky Casing Shoe, etc.

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Include many other time and labor savers for oil field operations, as well as technical paints and varnishes.

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Houston Tulsa Los Angeles New York

Export Office
30 Church St., New York

Squeaks from the Bull Wheel

The teacher was giving the kindergarten class a lesson in natural history. Turning to one small tot, she inquired:

"What do elephants have that no other animals have?"

"Little elephants."

"What's the difference between nectar and elixir?"

"Why, before John married his wife he nectar, and now elixir."

This is the story of Johnny McGuire,
Who ran through the town with his trousers on fire;
He went to the doctor's and fainted with fright
When the doctor told him his end was in sight.

Cohen: Congratulate me, my friend, my son is going to be married.

Oh—is he?

No—Abey.

Grandpa in a speedy car
Pushed the throttle down too far;
Twinkle, twinkle, little star,
Music by the G. A. R.

"Where were you during the sixth and seventh dances last night?

"Jack was showing me some new steps."

"Were they very hard?"

"Oh, no, we had cushions."

Give a co-ed enough rope and eventually she'll hang her head.

Kin I cut your grass for a meal, lady?

Our lawn mower is broken. I'd rather you'd eat it right off the ground.

Your first husband was a fine man. It's a shame he died.

Yes; that's what my second huband's always saying.

"Boo-hoo, I've shot a burglar."

"Don't take on, lady; it's nothing to cry over."

"But I thought it was my husband."

"I can't marry him, mother. He's an atheist, and doesn't believe there's a hell."

"Marry him, my dear, and between us we'll convince him that he's wrong."

Mama, am I descended from a monkey?"

"I don't know, son. I never knew any of your father's people."

Hubby awoke with a start and in the dim light of the bedroom observed his wife going through his pockets. "Hey there," said he, keep your hands off that money. It belongs to me."

Wife: "It won't belong now."

A Chicagoan visiting Fond du Lac, Wis., had occasion to call Appleton. Upon asking what the charge was, he was told fifty cents.

"Fifty cents. For that distance? Great Scott! In Chicago you can call hell up for fifty cents."

"Possibly," coolly answered the operator, "it's in the city limits."

In the course of the trial the judge turned to the negro woman on the stand and asked:

"How old are you?"

"I's 73, judge."

"Are you sure?"

"Yass, suh."

"Mandy, you don't look 73."

"I'se sure, judge."

After a few moments the trial was interrupted by Mandy.

"Judge, I's mistaken about my age being 73; that's my bust measure, suh."

There was pawky humor—or was it ready wit?—in the remark of a boy who, coming home one Sunday afternoon with a string of trout, was suddenly confronted by the minister. There was no way of escape, but the boy rose to the occasion. "Minister," he exclaimed, "d'ye see what thae troots got for nabbin' worms on a Sunday?"

The minister went on his way rejoicing.

"What'll we do with all those invisible hairnets we have left in stock?" asked the clerk.

"Put 'em on sale as the newest material for street dresses," replied the head of the department.

Dr. J. J. Rigert, commissioner of education in a recent address in Washington cited a number of school boy blunders. Among them were:

A chronic disease is a disease of the Chrone.

Homer's Iliad was not written by Homer, but by another man of the same name.

In Austria the chief business is getting austrich feathers.

A litre is a nest of young puppies.

Magna Charta was a law that no man could be put to death or imprisoned without his own consent.

Water is composed of two gins, oxygin and hydrogin. Oxygin is pure gin, hydrogin is gin and water.

Bungs are holes surrounded by barrels.

Diamond Drilling
is World-Wide

Sullivan Core Drills secure the most reliable information, for the least expense in equipment, operation, and transportation

A Sullivan wildcat outfit in Venezuela

ALL over the world Sullivan Diamond Drills have reduced the cost of oil exploration. In Santo Domingo, Venezuela, Peru, Colombia, Ecuador, Argentina, Mexico, Algeria, India, Borneo, Canada, Portuguese East Africa, Roumania, Russia, Persia, and in all oil fields of the United States they have made deep tests and explored structure.

CORES obtained by Sullivan Diamond Drills are exact geological samples of all strata penetrated, and give the most reliable information obtainable.

HARD or soft formations are cut by the Diamond Drill, which employ fish-tail bits, mud fluid, and any oil field method, *plus* perfected core fittings.

LARGE holes can be drilled where necessary but the speed and economy of drilling *small* holes is peculiar to the diamond drill. And cores from small holes yield as much geological data as large ones.

GREAT depths are no obstacle to Diamond Drills. They have taken over many holes abandoned when other rigs had reached their limit. They have proved to be the only equipment that will drill against heavy gas pressure.

TRANSPORTATION is another factor in diamond drilling ecenomy. Smaller sizes of casing are needed to drill to a given depth, the diamond drill equipment weighing 30 to 40 per cent less than other types of outfits for the same depth.

A WIDE range of types and sizes gives you a Sullivan Drill exactly suited to any conditions of work.

Send for the latest Diamond Drill Literature.
See Sulivan Drills "on the lot" at Tulsa

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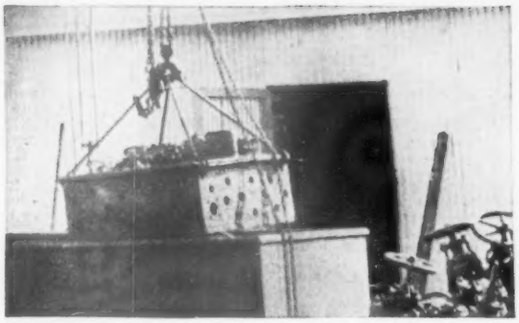

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CAKED-ON dirt, muck and oil can be removed from fishing tools, fittings, valves and other parts, easily and quickly, if it is done the Oakite way.

By simply immersing salvage parts for a short time in the cleaning solution all the caked-on dirt, oil and muck will be loosened so that it is easily rinsed off. Little or no hand scraping or scrubbing is needed. This is due to the remarkable emulsifying action of Oakite materials which a growing number of concerns are using to clean salvage parts. Risk of fire or explosion is avoided for the reason that Oakite materials are used in a water solution. Another fact equally important is that cleaning is done economically.

Have our nearby Service Man call and discuss with you the possibilities of applying Oakite materials and methods to your kind of work. Or write for interesting booklet. A post card request brings either. No obligation, of course.

Oakite Service Men, cleaning specialists, are located in the principal industrial centers of the U. S. and Canada

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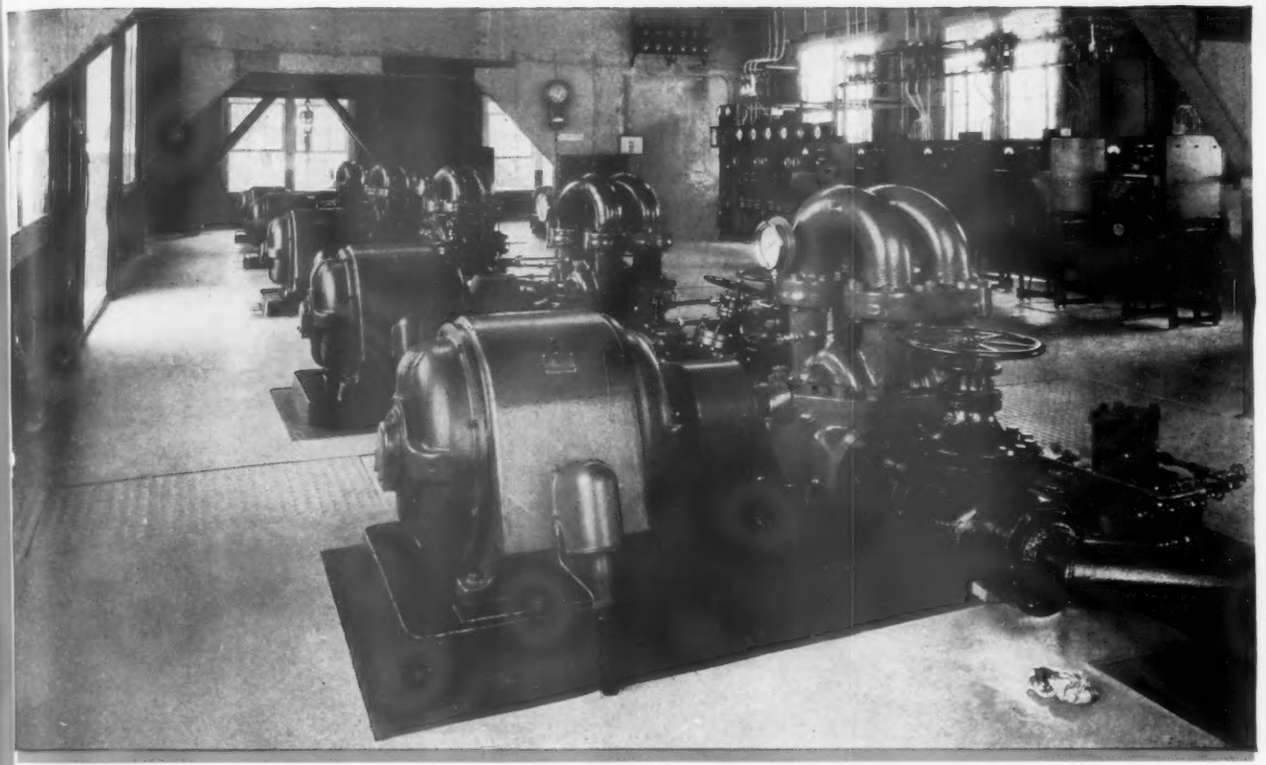

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